BIO-MEDICAL LIBRARY
UNIVERSITY OF MINNESOTA
RECEIVED
DEC
11
1950

Virginia MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA

CONTENTS

Guest Editorial. Howard A. Rusk, M.D. ---- 625

Mutual Support for Survival—Medical Plans for Civil Defense and Disaster Relief. William L. Wilson, Colonel Medical Corps, Washington, D.C. ---- 627

Pernicious Anemia: Diagnosis and Treatment. Byrd S. Leavell, M.D., Donald Shotton, M.D., and Charles Crockett, Jr., M.D., Charlottesville, Va. ---- 635

The Diagnosis and Treatment of Trichomonas Vaginalis. Robert Thrift Ferguson, M. D., F.A.C.S., and Glenn S. Edgerton, M.D., F.A.C.S., Charlotte, N. C. ---- 643

Hyperparathyroidism. J. B. S. Perrow, M.D., Lynchburg, Va. ---- 646

Radioactive Iodine Studies Following Hemithyroidectomy for Carcinoma of the Thyroid; A Possible Aid in the Diagnosis of Early Metastases—A Case Report. Kenneth R. Crispell, M.D., Charlottesville, Va. ---- 652

Clinicopathological Reports. Harry Walker, M.D., Editor, William Kay, M.D., Associate Editor ---- 655

Continued on page 6.

WADE HAMPTON
FROST ISSUE

December, 1950

XUM

for rapid response
in the pneumonias

Chloromycetin®

98.6

Chloromycetin
(chloramphenicol, Parke-Davis)
is supplied in Kapseals® of 250 mg.,
and in capsules of 50 mg.

PARKE, DAVIS &

XUM

Virginia Medical Monthly

Vol. 77, No. 12
WHOLE No. 1182

RICHMOND, VA., DECEMBER, 1950

$2.00 A YEAR
25 CENTS A COPY

GUEST EDITORIAL

Medicine, Mobilization and Manpower

INTENT upon remaining at peace, the United States, as a matter of national policy, has determined that, under current world conditions, one effective way of achieving that purpose is to remain strong through defense preparation. The primary basis of national defense and success in modern warfare has come more and more to rest on our potentials. The emphasis in defense preparations has shifted to the maintenance and improvement of those potentials. This approach provides greater assurance for increasing the national security, and at the same time it permits the fulfillment of peacetime objectives to which we are committed as a national policy.

Mr. W. Stuart Symington, Chairman of the National Security Resources Board, stated in his speech of October 25, 1950:

"Its first duty, by statute, is to 'advise the President concerning the coordination of military, industrial and civilian mobilization'.

"Its second, by Executive Order, is, with the approval of the President, to coordinate the defense activities of the various departments of the Government now working to make this country strong, to resolve interagency issues, prescribe policy and program directives, obtain reports and information on the status of work in said various agencies, coordinate related policies and activities among these agencies; and advise the President on the progress of the program."

A part of the job of the National Security Resources Board concerns policies and programs through which the nation can achieve an adequate state of readiness against the eventuality of a future war. These policies and programs relate to such matters as the stockpiling of strategic and critical materials, the training of skilled manpower, and the wide range of measures being undertaken currently to keep industry and the Armed Forces continuously prepared for possible emergencies. This readiness-planning job is designed to assure current actions without which the nation's resources might be inadequate to meet the requirements of war.

As the problems of health resources for both military and civilian needs in the event of national emergency are basic to any mobilization planning, there is a Health Resources Office as one of the nine basic offices of the National Security Resources Board. Dr. Norvin C. Kiefer is the Director. Other similar offices deal with such problems as production, materials, transportation, manpower, energy and utilities and similar areas.

The responsibilities of the Health Resources Office are:

a. Mobilization, allocation and utilization of all personnel necessary for wartime health services in public health work, hospitals, clinics, homes, military services, and similar functions; this personnel includes physicians, nurses, sanitary engineers, dentists, veterinarians, pharmacists, technicians and all other trained health personnel;

b. Environmental sanitation services, including water, food and milk sanitation; insect and rodent control; emergency housing and shelter sanitation; water pollution control; health aspects of sewage, refuse and waste disposal; sanitation on Common carriers; and similar activities;

XUM

c. Veterinary medical services, including the care of sick animals, the prevention of disease in our animal population, the prevention of spread of disease from animals to man, and the inspection of meat and other food products;
d. Utilization of health facilities, including hospitals, clinics, laboratories, suitable quarters for emergency health activities, and similar institutions and buildings;
e. Provision of all health equipment and supplies, medicinals and chemicals, biological preparations, and blood and blood derivatives;
f. Recommendations to assure maintenance of essential teaching and research in the health fields, including provisions for exemption from military service of certain categories of teachers and students;
g. Provision of professional leadership and direction to plans for the health aspects of civil defense.

In order to strengthen the work of this Health Resources Office, the Chairman of the National Security Resources Board this August, at the suggestion of the President, formed a Health Resources Advisory Committee. This committee consists of:

James C. Sargent, M.D., Professor of Urology, Marquette University, School of Medicine, Milwaukee, Wisconsin.

Harold S. Diehl, M.D., Dean of the Medical Sciences, University of Minnesota, Minneapolis, Minn.

Leo J. Schoeny, D.D.S., Chairman, Council on Dental Health, American Dental Association, 729 Maison Blanche Building, New Orleans, Louisiana.

Mrs. Ruth Kuehn, R. N., Dean, School of Nursing, University of Pittsburgh, Pittsburgh, Pa.

William P. Shepard, M.D., Professor of Public Health, Stanford University, San Francisco, California.

John B. Pastore, M.D., Executive Director, Hospital Council of Greater New York, 220 E. 42nd Street, New York, N. Y.

and

Chairman Howard A. Rusk, M.D., Professor and Chairman Department of Physical Medicine and Rehabilitation, New York University College of Medicine, New York, N. Y.

The Health Resources Advisory Committee is an advisory body and is concerned with matters which are the responsibility of the National Security Resources Board. Its secretariat is the Health Resources Office, which is responsible for the staff work of implementing those policies.

By Presidential direction, the Health Resources Advisory Committee also provides a forum for discussion and resolution of interdepartmental problems relating to utilization of national health resources, including hospitalization, health manpower mobilization and health services.

There has long been a need in the Federal government for a top-level agency which could provide policy decisions in matters of federal medical services in which not only government, but civilian and professional thought could be represented. Formed because of the urgency of mobilization planning, the Health Resources Office and the Health Resources Advisory Committee of the National Security Resources Board now provide such a mechanism. The responsibilities are great, and if properly executed, should have significant implications for the best possible utilization of all our health resources not only in mobilization, but under ordinary peacetime conditions as well.

HOWARD A. RUSK, M.D.

Dr. Rusk is Professor and Chairman of the Department of Physical Medicine and Rehabilitation, New York University College of Medicine, and Chairman of the Health Resources Advisory Committee to the National Security Resources Board.

MUTUAL SUPPORT FOR SURVIVAL
MEDICAL PLANS FOR CIVIL DEFENSE AND DISASTER RELIEF†

WILLIAM L. WILSON,* Colonel, Medical Corps,
Special Assistant to The Surgeon General, Department of the Army,
Washington, D. C.

"Men will find that they can prepare with mutual aid far more easily what they need, and avoid far more easily the perils which beset them on all sides, by united forces." This three-hundred-year-old statement by Spinoza[1] might well be our guide for modern civil defense.

Recent publications cover sufficiently for the moment the local problems which would be created for a city immediately within a disaster incident area, particularly if caused by an atomic attack. My objective, therefore, as suggested to me, will be a discussion of some broadening problems faced by a nation whose cities might continue under attack, along with a few proposed "mutual aid" methods for applying local resources to maximum national advantage.

"Mutual support" is an intricate combination of various forms of civilian aid between communities. It involves not only readiness for immediate dispatch of mobile functional units and transfer of mobile material means to other communities, but the reception of disaster victims from other areas as well, in order to provide them with relief, shelter, food, medical care, and other essentials to life and health. There is nothing new or insoluble in this concept, which can be simplified remarkably. On the other hand, an extraordinary amount of future civilian preparation by all of our communities would have to precede successful reception and care of thousands relocated by mass evacuations[2], while at the same time furnishing medical treatment to thousands of casualties in a disaster area, or elsewhere. It is because of the necessary long and careful preplanning that no modern nation may relax its vigilance until complete peace can be assured. In other words, civil defense is here to stay and it must be permanent for any nation in this era.

It would not be a phenomenon for a community to survive one enemy attack of the future. However, if World War II German experience means much, we may be sure that survival from repeated enemy attacks will require prearranged application of resources of many communities, at a time when they might be reduced by the war. In Germany no one city alone could handle adequately the problems created by saturation raids[3]. It is unlikely that any one of our States could do so now or in the future.

All essential daily health services of our communities must continue under a plan that would avoid the perils which could beset us on all sides. Hence, we should prepare with mutual aid what we need for the added medical burdens of two broad groups of emergency services, made necessary solely by a disaster. Many details of these emergency services have been discussed elsewhere previously, so we may hurry on as we recall that they group themselves broadly into casualties services [4,5], and public health services[6], while requiring special administrative considerations for atomic and other modern attacks[7], as well as for industrial preparedness[8]. Providing these necessary emergency services would curtail the essential services of the community. Therefore it is all-important that assistance come from other communities before a community, or a part of its essential services, might break down. This should result in utilization of all available civilian resources at the times and places required for the national survival. The Strategic Bombing Survey concluded[3] that this assistance could be supplied best by mobile reserves controlled by the national government, and so placed with respect to potential targets that they could enter stricken areas soon enough to participate effectively in their duties; and further, that the number and types of mobile reserves required should be determined by the likelihood of attack, vulnerability of the target, the forces available locally, and the assistance obtainable from other communities under mutual aid arrangements. The possible hazards of mutual aid and mobile support arrangements between communities and States without some national coordination have been recognized in our re-

*Personal views; suggestions contained herein imply no official sanction, approval, or policy.

†Presented by invitation before the Medical Society of Virginia at Roanoke, October 9, 1950.

XUM

cent national plan, under which regional offices would be established to serve as a link between a Federal civil defense agency and the State; the former would guide States, Territories, and possessions in working out operating procedures and arrangements for mutual aid and mobile support. This should reinforce such mutual aid and mobile support commitments and apply reserve resources best when national survival would require aid elsewhere.

Now it is one thing to generalize about these four important points of the Survey concerning mutual aid. It is quite another to provide immediately the realistic and reasonable answers to questions which should be answered to your satisfaction. In the first place, how accurately may we predict potential targets and their vulnerability? For that matter, who can be sure that the prime target will actually be hit instead of some nearby area? Next, can we predict the services permanently to be deployed in your State, or which of your reserve resources would be available to send elsewhere as needed? If so, exactly what would make up the mobile reserves, from whence would they come, and where would they be placed? How could they be moved? How could you assure their effectiveness? And, after all that, do we know what types, capacities, and sources of mobile support would exist to come in to your aid? Of course we do not at this time, and that is why your consideration of them will be invaluable.

These questions will have answers, but only after a long time and after expenditure of a great deal of effort, expense, and thought. All are the privileges of free citizens! Let us examine one practical example. How would you start in order to predict possible responsibilities of your State in such a complex scheme of mutual support? It is possible that you might have the only community hit by a disaster. On the other hand, an enemy attack could strike some other community only, or that other and your community simultaneously. You might find yourselves faced with necessary maximum self-help, if attacked, and also with necessary readiness to support other communities. You, of Virginia, have Washington and Baltimore at one end of your State, Tennessee at the other, Delaware, Pennsylvania, New Jersey and Ohio, and even New York City, within supportable distances. The Alexandria and Arlington medical societies have collaborated with the Medical Society of the District of Columbia for many months in development of medical planning for civil defense. This will, of necessity, extend to other areas also. It would be hazardous to continue much longer without standards for the measurement of your future readiness to care for your own problems or to aid in those of others.

The standards cannot be set independently nor reasonably without full consideration of the interrelationships which must exist between all of the mobile reserves from all communities, and also between them and our armed forces. Such standards doubtless will come from our civil authorities, but they have significance to military planners too. That is one reason why military men must be concerned with these many matters, occasionally identified as solely of civilian interest, responsibility, and right to develop. A military commander of a theater of operations has complete responsibility for civil defense in the area occupied by his forces. Furthermore, while civil defense is a civilian responsibility, the armed forces have some clearly delineated civil defense responsibilities[9] within the United States, without existence of a theater of operations.

Civilian communities and civil administrators must learn and coordinate their respective plans far beyond city or even State borders and long before the necessary operations are to be implemented. They and military authorities are jointly responsible for integrating civilian and authorized military plans for this. As an example, independent planning should not visualize treatment of civilian victims of disaster in nearby military or other Federal hospitals, except according to a preplanned system. And such planning might not be feasible.

Twelve of our cities concentrate forty-two million people within their metropolitan areas. Many of the 106 cities in the United States of more than one hundred thousand population might be reasonable targets of enemy attacks. Practically all civilian health means of the Nation are in these cities. Many of these would likely escape disaster and enemy attacks for years to come but others might not. On the other hand, some sure targets of attack of the highest priority might not be in these cities. Extensive disaster likely would produce victims in any of the cities, and at the same time, would upset, decrease, or eliminate local medical services, thereby creating a demand for mobile mutual support. So, repeating somewhat, no fewer than 106 communities of this country should

study problems pointed up by the Strategic Bombing Survey, vulnerability should be predicted for these cities and all other foreseeable targets, and reasonable mathematical estimates of potential damage and response undertaken. So long as we may revise such estimates at any time and wherever they can be shown to be inaccurate, there could be no harm in making a start. Any specific plan will suffice as a start. Perhaps an illustrative discussion with every community which should get ready would clarify some of our perplexing future difficulties and necessary actions. What direction might such a discussion take?

The first point, likelihood of attack, is over-simplified in Table 1. However, military and civilian planners of normal capabilities can list and apply many factors to this table to arrive at sound predictions. What forecast would we make for your own State, the District of Columbia, Baltimore, Pennsylvania, northeastern Tennessee, Ohio? Of twenty-two communities of over a hundred thousand in the region indicated, which, if any, would this table pin upon you; which would disaster select? Which would escape and take on the job of aiding other less fortunate communities?

TABLE 1 – LIKELIHOOD OF ATTACK

POTENTIAL SITUATIONS REQUIRING CIVIL DEFENSE AND DISASTER RELIEF

PREPARED BY W. L. WILSON, COLONEL M.C., U.S. ARMY, 1 MAY 1950

COMMUNITY OR PLACE OF DISASTER OR EVENT	COMMUNITY TO FURNISH INITIAL RELIEF HEALTH SERVICES	COMMUNITY REQUIRING SERVICES	SOURCE FOR ADDITIONAL HEALTH SERVICES WHEN OWN OVERWHELMED	COMMUNITY TO FURNISH TEAMS FOR SERVICES	COMMUNITY IN WHICH SERVICES MAY NEED TO BE PROVIDED
OWN ONLY	OWN	OWN ONLY	OWN EXPANDED OWN IMPROVISED ANOTHER COMMUNITY	OWN OWN OWN + OTHERS	OWN OWN OWN + OTHERS
OTHER ONLY	OTHER	OTHER ONLY	OTHER EXPANDED OTHER IMPROVISED OTHER + OURS	OTHER OTHER OTHER + OURS	OTHER OTHER + OWN OTHER + OWN
OWN & OTHER	OWN + OTHER	OWN + OTHER	OWN + OTHER EXPANDED OWN + OTHER IMPROVISED OWN + ALL OTHERS	OWN + OTHER OWN + OTHER OWN + ALL OTHERS	OWN + OTHER OWN + OTHER OWN + ALL OTHERS

Our second point, vulnerability of a target has been demonstrated clearly in Europe, in Japan[8], and now in Korea. Authorities agree that every nation is vulnerable to future attack by a powerful enemy[10,11]. But if some communities should be attacked or some not, the vulnerabilities of each would be reduced by a preliminary decision as to the likely priorities for furnishing mutual medical support between communities. Thus, systems would be predetermined and assured. Table 2 illustrates a simple method for undertaking this. It is not offered as an invariable guide and would have to be adjusted to changing local circumstances. Above all, we must appreciate fully the necessity for adapting our medical plans and future medical performances to over-all plans and operations. There is every need for closest collaboration with fire, police, rescue, engineering, communications, and many other services of each community, and their adaptation to medical plans as well. The latter was appreciated in Germany as indicated by the Survey finding[3] that next to fire protection, the emergency medical service was considered the most important division of the air-raid protection service. In brief, vulnerability increases or decreases with the readiness of the community to repair damage inflicted by an attack. And medical preparedness is one of the most important of all factors preplanned with a view to reducing vulnerability.

The third point of the Survey, the forces available locally, and the fourth, assistance obtainable from

TABLE 2

LIKELY PRIORITIES(a)
MUTUAL MEDICAL SUPPORT
CIVIL DEFENSE AND DISASTER RELIEF

PREPARED BY W. L. WILSON, COLONEL, M.C., U. S. ARMY, 1 MAY 1950

COMMUNITY	SOURCE OF NECESSARY HEALTH SERVICES (b)				POPULATIONS RECEIVED FROM OTHER COMMUNITIES		PATIENTS RECEIVED FROM OTHER COMMUNITIES TO BE CARED FOR
	WILL FURNISH OWN ONLY	WILL RECEIVE FROM OTHERS	WILL FURNISH OWN AND SEND AID TO OTHERS	WILL SEND AID TO OTHERS	TO AID BY SERVING	TO BE CARED FOR	
ATTACKED	I	II	III	IV	V	VI	VII
NOT ATTACKED	1	7	2	3	4	6	5

NOTES

a. ROMAN NUMERALS HAVE PRIORITY OVER ARABIC NUMERALS; BOTH LOSE PRIORITY AS THEY INCREASE

b. APPROPRIATE CIVIL AUTHORITY LIKELY WOULD PRESCRIBE STANDARDS.

other communities under civil defense mutual aid arrangements, can be examined intelligently, only after developing some means for measuring adequacy, some standards of uniform nature. If such standards have ever been prepared they had not come to my attention in May 1950. Hence, it may be that a recent comprehensive list of suggested minimum medical standards for modern civil defense is our first in the United States.

Only condensed versions of far more original details are presented in Tables 3 to 9, inclusive. The original listing has stimulated comments from several experienced authorities, and resulted in extremely valuable suggestions toward improvement. The

TABLE 3 — TYPES OF SERVICES AND UNITS

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W. L. WILSON, COLONEL, M. C., U. S. ARMY, 1 MAY 1950

TYPE OF SERVICE REQUIRED	ZONE OF ACTIVITY	UNITS — TEAMS
CASUALTIES SERVICE	COLLECTING	MOBILE AID GROUPS: GENERAL, INDUSTRIAL AID STATION GROUPS: GENERAL, INDUSTRIAL
	EVACUATING	MOTOR AMBULANCE GROUPS
MEDICAL REGULATING SERVICE	ALL	REGULATING OFFICES
HOSPITAL SERVICES	ALL	CLEARING HOSPITALS GENERAL HOSPITALS CONVALESCENT HOSPITALS
MOBILE SUPPORT	ALL	SURGICAL, BURN, SHOCK, ORTHOPEDIC, TRANSFUSION, GENERAL THERAPY, NEUROSURGICAL, THORACIC, MAXILLO-FACIAL, GAS CASUALTY, PSYCHIATRIC, PREVENTIVE MEDICINE
MEDICAL SUPPLY	ALL	SUPPLY POINTS LARGE BASE, SMALL BASE, INTERMEDIATE, LOCAL, OPTICAL REPAIR

TABLE 4—CASUALTIES SERVICES

MINIMUM MEDICAL STANDARDS

(SUGGESTED)

FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W. L. WILSON, COLONEL, MC, U.S. ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM MEANS REQUIRED FOR ACTIVITY		
TYPE	PERMANENT (IN PLACE)	SUPPLEMENTARY	PERSONNEL	TRANSPORT	EQUIPMENT
AID GROUP (GENERAL) SECTION (INDUSTRIAL) SECTION	1 PER 5000 POPULATION	5 PER 100,000 POPULATION	4 LITTER BEARERS 2 AID PERSONNEL 6 DRIVERS 6 ATTENDANTS	2 AMBULANCES 1 CAR	1 LITTER PER GROUP 2 BLANKETS PER LITTER INDIVIDUAL AID EQUIPMENT
AID STATION GROUP (GENERAL) SECTION (INDUSTRIAL) SECTION	1 PER 25,000 POPULATION WITHIN 1 MILE RADIUS WHERE POPULATION LESS	2 PER 100,000 POPULATION	3 PHYSICIANS 3 CHAPLAINS 24 TRAINED TECH. 30 UNTRAINED ASST. 10 RECORDS CLERKS AND OTHERS DRIVERS AS REQUIRED	1 CAR 66 PASSENGER CAPACITY, BUS OR TRUCK SUFFICIENT TRUCKS FOR EQUIPMENT	LOCALLY ADJUSTED TO PRESCRIBED STANDARDS
MOTOR AMBULANCE GROUP	2 PER AID STATION	1 FOR EACH 3 GENERAL AID STATIONS 1 FOR EACH 2 INDUSTRIAL AID STATIONS	CHIEF OF GROUP 4 DISPATCHERS PER AID STATION 3 DRIVERS PER VEHICLE 3 ATTENDANTS PER VEHICLE 3 AUTO MECHANICS PER AID STATION	1 CAR (PERSONNEL) VEHICLE CAPACITY FOR 200 PATIENTS PER HOUR; 10 PERCENT EXTRA FOR BREAKDOWNS, ETC.	LOCAL MOTOR VEHICLES

figures shown must not be construed to be final or authoritative planning factors in the formulation of your detailed plans. The only purpose in presenting them here is to provoke your thought, and your action under the appropriate civilian leadership. As was suggested with reference to estimating vulnerability, we may and should revise, also, initially accepted standards when and where they can be shown to be unacceptable. You and other civilians may participate in the establishment and revisions of such standards by civil authority. The fact that an extensive and complex system may be simplified to this extent for ready study may elicit your confidence. After examining these tables, let us ask continuously

TABLE 5—REGULATING SERVICES

MINIMUM MEDICAL STANDARDS

(SUGGESTED)

FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W. L. WILSON, COLONEL, M.C., U.S. ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM PERSONNEL MEANS REQUIRED FOR ACTIVITY	
MEDICAL REGULATING OFFICES AT	PERMANENT *(IN PLACE)*	SUPPLEMENTARY	PERSONNEL	TRANSPORT
AID STATIONS CITY-WIDE METROPOLITAN STATE-WIDE REGIONAL NATIONAL	ONE TO EACH OFFICE *(ALL PATIENT MOVEMENTS INTEGRATED WITH MILITARY MEDICAL REGULATING SERVICE)*	ALTERNATE FOR EACH OFFICE *(IN CASE PERMANENT ONE INOPERATIVE)*	CHIEF MEDICAL REGULATOR 1. SECRETARY-FILE CLERK AS SIZE AND RESPONSIBILITIES INCREASE, VARIOUS ADDITIONAL PERSONNEL REQUIRED	CARS—AS REQUIRED MOTORCYCLES AS REQUIRED MAINTENANCE VEHICLES

XUM

TABLE 6 — HOSPITAL SERVICES

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, M C, U S ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM MEANS REQUIRED FOR ACTIVITY	
HOSPITALS	PERMANENT *(IN PLACE)*	SUPPLEMENTARY	PERSONNEL	TRANSPORT
CLEARING GENERAL CONVALESCENT	ALL EXISTING CIVILIAN HOSPITALS MAXIMUM EXPANSION OF THE EXISTING HOSPITALS BY UTILIZING SPACE CONTROLLED BY HOSPITALS WITH EQUIPMENT UNDER CONTROL OF HOSPITALS IN HOSPITALS ELSEWHERE BY ESTABLISHING NEW HOSPITALS	FOR CIVILIAN DEFENSE CASUALTIES ONLY PLANT FACILITIES FOR TWENTY(20) PERCENT OF CITY AREA *(LESS SUBURBS)* *(STATED AS PERCENT OF POPULATION)* CLEARING — 4% GENERAL — 3% CONVALESCENT-13%	FOR LOCAL DETERMINATION	FOR LOCAL DETERMINATION

of ourselves whether they are reasonable. For example, they reveal that mobilizing the permanent local and mutual aid units for all 106 cities at one time could require civil defense services of almost all available physicians. What does that mean if the World War II number of 61,000 physicians should be in the armed services at the same time? By studying the propositions in this manner we may obtain acceptable answers. It would be unreasonable to predict a need for civil defense services in all 106 cities simultaneously. Another factor bringing us back to reasonable concepts is that many military physicians will be in this country. It would be reasonable to expect systematic allocation and immediate shifts

TABLE 7 — SPECIALIST SUPPORT TEAMS

MINIMUM MEDICAL STANDARDS
(SUGGESTED)
FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, MC, U S ARMY, 1 MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM PERSONNEL MEANS REQUIRED FOR ACTIVITY					
MOBILE SUPPORT SPEC. TEAMS	PERMANENT (IN PLACE)	SUPPLEMENTARY	SURGEONS	PHYSICIANS	NURSES	ANESTHETIST	OTHERS	ORDERLIES -CLERKS
SURGICAL	2 PER 100,000 POPULATION	4 PER 100,000 POPULATION	2	0	1	1	0	3
BURN	6 PER 100,000 POPULATION	12 PER 100,000 POPULATION	-	1	1	-	-	8
SHOCK	1 PER GEN. HOSPITAL	1 PER 100,000 POPULATION	-	1	1	-	-	2
ORTHOPEDIC	1 PER 100,000 POPULATION	1 PER 100,000 POPULATION	-	2	1	1	-	3
TRANSFUSION	2 PER 100,000 POPULATION	1 PER 100,000 POPULATION	-	2	2	-	1	35
GENERAL THERAPY	---	2 PER 100,000 POPULATION	-	2	1	-	1	4
GAS CASUALTY	2 PER 100,000 POPULATION	1 PER 100,000 POPULATION	1	1	-	-	2	10
NEUROSURGICAL	---	48	2	-	1	1	-	3
THORACIC	---	48	2	-	1	1	-	3
MAXILLOFACIAL	---	48	2	-	1	1	-	3
PSYCHIATRIC	---	48	-	5	-	-	2	11
PREVENTIVE MEDICINE	---	48	-	1	-	-	6	12

TABLE 8—SUPPLY SERVICES

MINIMUM MEDICAL STANDARDS

(SUGGESTED)

FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, M C, U S ARMY, I MAY 1950

UNITS REQUIRED AS MINIMUM			MINIMUM MEANS REQUIRED FOR ACTIVITY	
SUPPLY POINT	PERMANENT	SUPPLEMENTARY	PERSONNEL	TRANSPORT
LARGE BASE	1 PER 300,000 TO 500,000 POPULATION	1 PER 3 MILLION TO 5 MILLION POPULATION	24 SUPERVISORY 317 ALL OTHERS	# 50 TO 75 PERCENT OF TONNAGE/CUBAGE MAY REQUIRE MOVEMENT IN FIRST 24 HOURS. # ALL TRANSPORT MUST BE PREVIOUSLY ALLOCATED & IMMEDIATELY AVAILABLE WITH DRIVERS.
SMALL BASE	1 PER 100,000 TO 300,000 POPULATION	1 PER 1 MILLION TO 3 MILLION POPULATION	8 SUPERVISORY 68 ALL OTHERS	PERMANENT – AS LOCALLY REQUIRED FOR INCIDENTS: SUFFICIENT FOR 1260 SHORT TON/156,000 CUBIC FEET OF SUPPLIES AND EQUIPMENT DURING 7-DAY PERIOD #SEE ABOVE
INTERMEDIATE	1 PER 25,000 TO 50,000 POPULATION	1 PER 25,000 TO 50,000 POPULATION	2 SUPERVISORY 30 ALL OTHERS	FOR INCIDENTS: SUFFICIENT FOR 210 SHORT TON/26,000 CUBIC FEET OF SUPPLIES AND EQUIPMENT DURING 7-DAY PERIOD #SEE ABOVE
LOCAL		1 PER 15,000 TO 25,000 POPULATION	2 SUPERVISORY 19 ALL OTHERS	FOR INCIDENTS: SUFFICIENT FOR 105 SHORT TON/13,000 CUBIC FEET OF SUPPLIES AND EQUIPMENT DURING 7-DAY PERIOD #SEE ABOVE
OPTICAL REPAIR	2 PER 50,000 POPULATION	2 PER 100,000 POPULATION	1 SUPERVISORY 6 ALL OTHERS	AS REQUIRED UNDER LOCAL CIRCUMSTANCES

of means between military and civilian employment when necessary. Simple schemes can be designed for circumstances favoring such actions[12-15]. Adequate medical leadership, conscientious management, voluntary performance under medical guidance by citizens who would have been taught their respective parts as auxiliary medical personnel, all would combine to bring success. But the exact design of standards or units for mutual aid is not our mission here. They are brought up with one idea, that nothing more than a quick inspection of them will convince the most reluctant, the least cooperative physician, society, or community that civil defense will be possible only with long, careful, conscientious study and

TABLE 9 - EQUIPMENT REQUIREMENTS

MINIMUM MEDICAL STANDARDS

(SUGGESTED)

FOR CIVIL DEFENSE IN PRIORITY TARGET AREAS

PREPARED BY W L WILSON, COLONEL, MC, U S ARMY, I MAY 1950

SERVICE	ZONE OF ACTIVITY	TYPE OF UNIT	MINIMUM EQUIPMENT MEANS REQUIRED FOR ACTIVITY
CASUALTIES	COLLECTING	AID GROUP	1 LITTER PER GROUP 2 BLANKETS PER LITTER INDIVIDUAL SETS FOR AID PERSONNEL, LITTER BEARERS, DRIVERS & ATTENDANTS SPECIAL BURN AND OTHER DRESSINGS WATER CANTEENS AND CONTAINERS
		AID STATION	50 LITTERS — CLOTHING FOR PATIENTS 100 BLANKETS — RECORDS & REPORTING FORMS COOKING & MESSING — PLANT FACILITIES & SERVICES
	EVACUATION	MOTOR AMBULANCE GROUP	MOTOR FUEL, LUBRICANTS, SPARE PARTS, TIRES REPAIR TOOL SET 1 LITTER & 2 BLANKETS PER LITTER PATIENT CAPACITY PER VEHICLE
MEDICAL REGULATING	ALL	REGULATING OFFICES	OFFICE AND COMMUNICATIONS EQUIPMENT SUPPLIES REPORTING AND RECORDS FORMS
HOSPITAL	ALL	CLEARING HOSP. GENERAL HOSP. CONVALESCENT HOSPITAL	FOR TEN PERCENT OF POPULATION FOR INJURIES AS FOLLOWS: 6.5 % TRAUMA (*FRACTURE 1.5%, CONTUSIONS 3.0%, LACERATIONS 2.0%*) 6.0 % BURNS 2.5 % RADIATION
MOBILE SUPPORT & RESERVE *(MEDICAL)*	ALL	SPECIALIST TEAMS	AS REQUIRED BY TEAMS
MEDICAL SUPPLY	ALL	SUPPLY POINTS	MINIMUM ESSENTIAL FOR SUPPLIES HANDLED
		OPTICAL REPAIR	LOCAL FACILITIES

XUM

active participation by all. Consideration of these tables surely will convince the most optimistic person that we have many and tedious efforts ahead of us if we are to anticipate successful civil defense. Certainly none can deny that mutual aid can be developed only by such attention to our duties.

In summary, there have been presented sufficient details to illustrate the complexities of preparing for civil defense; these have indicated the fallacy of assuming that civil defense can be effectively provided within a short period of time; suggested preliminary standards for measuring readiness for civil defense in priority target areas have been listed; and an effort has been made to support the recommendation to you of a need for development and maintenance of mutual aid resources within your State.

The current absence of war, or the fact that enemy attack against our citizens may be no immediate threat, should not delay energetic development of practical means for civil defense and disaster relief. Can anyone assure us that mass evacuations will ever be unnecessary in peace as well as war? If not, we must be prepared for them. Once developed, civil defense may be maintained. Civil defense must become a part of civilian existence unless incontrovertible proof can be given that it will not be needed in the future. Who can provide that?

Civil defense is everybody's business. It should be designed and implemented by civilians, for civilians, under civilian direction and control. If not developed now under proper directions of responsible civil authorities, because we want to do that, it is conceivable that an opportunity to do so later might never be given us.

BIBLIOGRAPHY

1. Spinoza, Benedict: Ethics, Prop. XXXV, Note.
2. Wilson, William L.: Good Health in Wartime Mass Evacuation, *Med. Ann. D. C.* October, 1950.
3. The United States Strategic Bombing Survey: Final Report Civilian Defense Division, January, 1947.
*4. Wilson, William L.: Medical and Sanitary Care of the Civilian Population Necessitated by Attacks from Hostile Aircraft, *The Army Med. Bull.* **60**:63, January, 1942.
*5. Wilson, William L.: Medical Plans for Civil Defense and Disaster, *U. S. Armed Forces Med. Jour.* **1**:4, 462, April, 1950. Washington: United States Government Printing Office, 1950.
*6. Wilson, William L.: Public Health Approach to Civil Defense, Harvard University School of Public Health, Boston, Massachusetts, April 28, 1950.
*7. Wilson, William L.: Medical Planning for Atomic Disaster, *Jour. Fla. Med. Assn.* **37**:4, October, 1950.
*8. Wilson, William L.: How Should We Apply the Lessons Learned in World War II to Future Planning? Proceedings, Tenth Annual Congress on Industrial Health of A.M.A., New York, February 20, 1950.
9. Beers, Barnet W.: The Armed Services and Civil Defense, *Army Information Digest* **21**, August, 1950.
10. Devan, S. Arthur: Planning National Defense 1950 to 1970, The Library of Congress Legislative Reference Service, *Public Affairs Bulletin* No. 75, Washington, D. C., September, 1949.
11. Bush, Varnevar: Modern Arms and Free Men, New York, Simon and Schuster, 1949.
*12. Wilson, William L.: Medical Aspects of Government Services in Time of National Emergency, *Bull. U. S. Army Med. Dept.* **III**; No. 7, 493, July, 1948, and *J.A.M.A.* **137**:9, 793, June 26, 1948.
*13. Wilson, William L.: Civil Organization for Health in Time of War, *Bull. U. S. Army Med. Dept.* **VIII**: 10, 778, October, 1948.
*14. Wilson, William L.: Administration of Civilian Medical Care in Total War, *Bull. U. S. Army Med. Dept.* **IX**:2, 107, February, 1949.
*15. Wilson, William L.: Military-Civil Integration of Health Services for Disaster Control, University of California School of Public Health, Berkeley, California, January 9, 1950.

PERNICIOUS ANEMIA: DIAGNOSIS AND TREATMENT*

BYRD S. LEAVELL, M.D.,
DONALD SHOTTON, M.D.,
and
CHARLES CROCKETT, JR., M.D.,†
From the Department of Internal Medicine, University of Virginia Medical School, Charlottesville, Virginia.

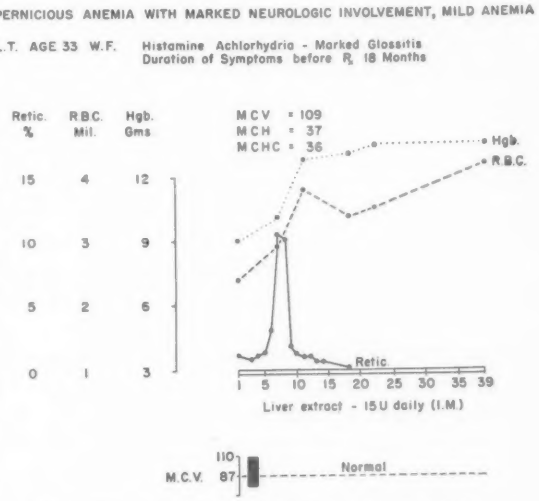
INTRODUCTION

The outlook for patients with an invariably fatal disease changed dramatically in 1926 when Minot and Murphy[1] published their paper on the treatment of pernicious anemia with a special diet. Since that time the contributions of many individuals have increased our knowledge of the disease and improved the methods of treatment at our disposal. The recent studies on "Folic Acid" and "Vitamin B_{12}" have stimulated renewed interest in this disease. Despite these advances there are individuals with pernicious anemia who suffer because diagnosis is delayed and treatment is inadequate. For this reason it was felt that a review of some of the problems of diagnosis and treatment of this disorder would be worthwhile.

DIAGNOSIS

Recognition of the typical case of pernicious anemia is not difficult. In such cases the onset is gradual in middle age or later. Common symptoms are numbness and tingling of the extremities (nearly always most marked in the lower), weakness, poor appetite, weight loss, burning of the tongue, and ataxia. Often the diagnosis is suggested by the appearance of the patient because of the combination of gray hair and a smooth, sallow, or "lemon-yellow" skin. Physical examination usually reveals atrophy of the papillae of the tongue. Neurological examination may or may not reveal disturbance of the Romberg test, position sense of the toes, vibratory sensation, deep tendon reflexes or sensation to light touch or pin prick. If the disease is suspected, further laboratory investigation generally is sufficient to confirm the diagnosis. The combination of hyperchromic macrocytic anemia, achlorhydria after histamine, and low or normal leukocyte count is almost diagnostic. Study of the bone marrow in untreated cases reveals a megaloblastic type of erythropoiesis associated with abnormal, large, myelocytes, metamyelocytes, and macropolycytes. A positive indirect van den Bergh reaction and increased fecal urobilinogen are usually present.

In other instances the disease is not so easily recognized. In this category are the young patients with the disease; individuals with marked neurological involvement and little anemia; those with complicating factors such as blood loss which modify the type of anemia present; those in whom the picture has been confused by inadequate treatment. Recognition of the disease is often delayed in negroes, and this is often due to the failure to realize that the incidence of pernicious anemia in the negro is about the same as that in the white. At the University of Virginia Hospital the incidence of pernicious anemia is 92 per 100,000 white admissions, 66 per 100,000 colored admission.[2] Some difficulties in diagnosis are illustrated by the patients shown in Charts I and II.


PERNICIOUS ANEMIA WITH MARKED NEUROLOGIC INVOLVEMENT, MILD ANEMIA
L.T. AGE 33 W.F. Histamine Achlorhydria - Marked Glossitis
Duration of Symptoms before Rx 18 Months
Retic. % RBC. Mil. Hgb. Gms
15 4 12
10 3 9
5 2 6
0 1 3
MCV = 109
MCH = 37
MCHC = 36
Hgb.
R.B.C.
Retic.
1 5 10 15 20 25 30 35 39
Liver extract - 15U daily (I.M.)
M.C.V. 110 87
Normal

The patient shown in Chart I will probably remain an invalid because of the delay in instituting treatment. This in turn was due to repeated failure to seriously consider the diagnosis of pernicious

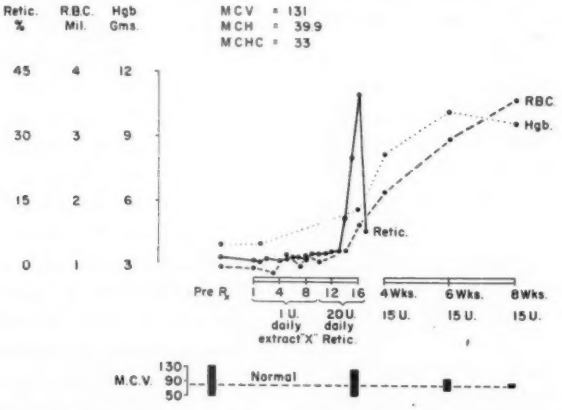
†B. Armistead Shepherd Fellow.
*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, October 9-12, 1949.

XUM

anemia because of the age of the patient, the marked neurological disease in the presence of but slight anemia. It cannot be emphasized too strongly that there is little relationship between the severity of the anemia and the severity of the neurological involvement in this disease. Chart II illustrates a patient with severe anemia and no central nervous system involvement.

PERNICIOUS ANEMIA REFRACTORY TO EXTRACT "X" RESPONDING TO OTHER EXTRACT

E.F.T. Age 68 W.M. Histamine Achlorhydria - Megaloblastic Marrow. Mild Glossitis. Slight Neurologic Involvement.

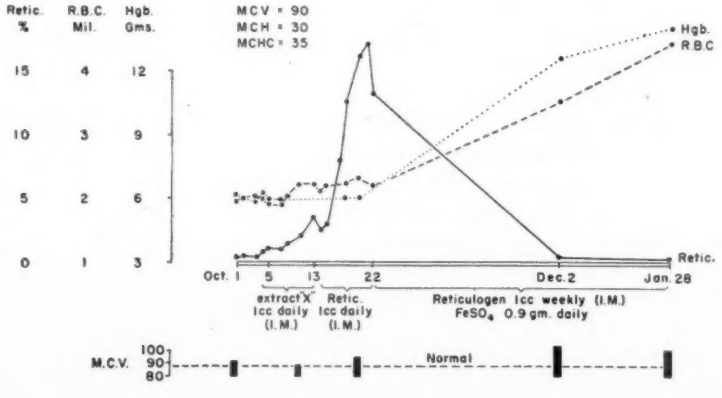


The patient in Chart III illustrates the combined effect of insufficient erythrocyte maturation factor associated with chronic blood loss. The blood loss was recognized, treated with transfusion and corrected. Later anemia recurred. Note that the MCV and other indices are within normal limits. However, the megaloblastic bone marrow, achlohydria after histamine, and response to specific therapy leave no reasonable doubt about the diagnosis of pernicious anemia. Often pernicious anemia in negroes is not recognized promptly.

In an individual with pernicious anemia, as in any patient with anemia, it is of paramount importance to establish the diagnosis before beginning treatment. The busy practitioner is tempted to compromise by prescribing a preparation containing both liver and iron, and probably vitamins, rather than meet the challenge of the diagnostic problem of the patient with anemia. Such treatment by recognition of a "sign" is not ideal. Physicians who

PERNICIOUS ANEMIA WITH NORMAL BLOOD INDICES - HISTORY OF HEMORRHAGE

J.H. Age 50 C.F. Histamine Achlorhydria - Megaloblastic Marrow Moderate Glossitis - Minimal Neurologic Involvement.



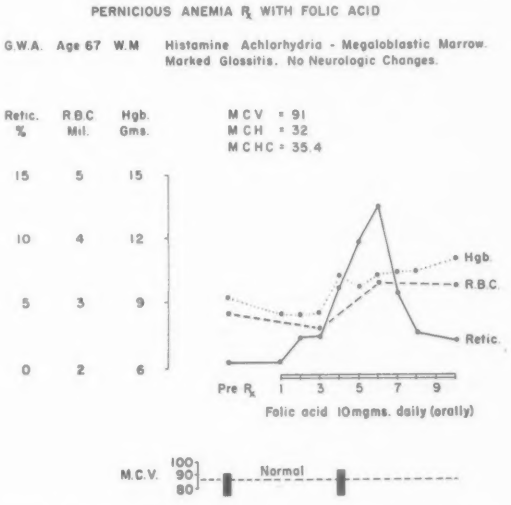
would not treat "fever", or "edema", do not hesitate to treat "anemia" without further diagnosis. If treatment is started with a mixed preparation, often the physician is faced with the problem of obtaining only partial remission in the symptoms and blood picture and still not have a diagnosis. In such a situation, examination of the blood smear, determination of the indices, and study of the bone marrow may not reveal the diagnosis. The dilemma is not escaped even if normal blood values are obtained under treatment. There still remains the question of whether to stop treatment that may be essential to the patient's health, or continue a treatment that may be unnecessary. At times treatment must be discontinued before diagnosis can be established.

TREATMENT

Preparations: Liver extract, folic acid (pteroylglutamic acid), and vitamin B_{12} are the most important preparations used in the treatment of pernicious anemia. All of these agents produce a change from a megaloblastic erythropoiesis to the normoblastic type in about 72 hours. There follows a rise in reticulocytes, hemoglobin, erythrocyte values, coincident with a fall in the plasma iron, serum bilirubin, and fecal urobilinogen. Later there is return of the erythrocytes to normal size and free erythrocyte protoporphyrin rises to normal values. The appetite improves, papillae of the tongue reappear, weight increases, and the patient usually returns to normal health. However, the ability to secrete hydrochloric acid and the so-called "intrinsic factor" do not return.

The unit of liver extract is that amount of antianemic material which, when given daily to a patient with pernicious anemia in relapse, has been shown, in the opinion of the Advisory Board, to have produced a satisfactory rise in reticulocytes, erythrocytes, and hemoglobin.[3] All liver extracts on the market labelled with a unit potency, are supposed to be tested for potency by the drug companies before they are marketed. Parenteral extract is more satisfactory than oral preparations because the physician is sure of the dosage and absorption. It also means a better follow-up and better contact with the patient. Whereas crude liver extract may be more effective than concentrated extract in some nutritional anemias, there is no evidence to indicate that this is true in pernicious anemia, even when severe central nervous system damage is present. Since they are at least as potent as the others, concentrated extracts are preferable in pernicious anemia because they cause less discomfort on injections and are less expensive to the patient, both in cost per unit and in frequency of visits to the physician. Microbiologic methods are used in assaying vitamin B_{12}. The validity of transposing these results into a unit for a human being with pernicious anemia remains to be established.

Folic acid is a member of the vitamin B group. It is effective in producing a hematological response in pernicious anemia and related macrocytic anemias when taken orally in small amounts. However, experience has shown that it does not afford protection for the neurological aspects of pernicions anemia and its use in pernicious anemia would appear to be restricted to patients who develop a hypersensitivity to liver extract and who have no sign of neurological disease. We have followed several patients of this type for several years. They were maintained on folic acid daily and ate liver several times a week. No neurological signs or symptoms have developed. In Chart IV is shown the hematological response

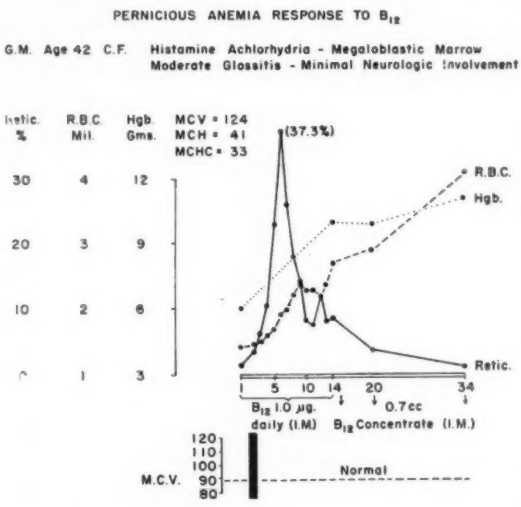

PERNICIOUS ANEMIA Rx WITH FOLIC ACID
G.W.A. Age 67 W.M Histamine Achlorhydria - Megaloblastic Marrow. Marked Glossitis. No Neurologic Changes.
Retic. % RBC Mil. Hgb. Gms.
15 5 15
10 4 12
5 3 9
0 2 6
MCV = 91
MCH = 32
MCHC = 35.4
Hgb.
R.B.C.
Retic.
Pre Rx 1 3 5 7 9
Folic acid 10mgms. daily (orally)
M.C.V. 100 90 80 Normal

occurring in a patient with pernicious anemia treated with folic acid.

Vitamin B_{12} is the most potent preparation, weight for weight, that we have available in the treatment of pernicious anemia. Experience has shown it to be effective in producing hematological response in pernicious anemia. One microgram of B_{12} is approximately equivalent to one U.S.P. unit of liver

XUM

extract. It is given by injection because oral administration is less effective and unreliable. Whether it equals or surpasses liver extract in the treatment of the neurological aspect of this disease remains to be established. Preliminary observations suggest it



is quite effective. In Chart V is shown the effect of treatment of a patient with this preparation.

Method of Treatment: Of fundamental importance in the management in patients with pernicious anemias is the recognition of involvement of the central nervous system. Since the severity of the neurological involvement has little or no relationship to the severity of the anemia (Cases I and II), adequate treatment for one aspect of the disease may be inadequate for the other. The experience with folic acid and transfusions indicate that the blood may be restored to normal without satisfactory improvement in the neurological aspect of the disease. We believe that it is most important for the physician to decide whether or not neurological disease is present, since we feel that the treatment of the patient with neurological involvement is quite different from the patient without this complication. For this reason the treatment of the patient with pernicious anemia without neurological involvement and the patient with neurological complications will be discussed separately.

Treatment of the individual with pernicious anemia without involvement of the central nervous system is simple and is one of the most gratifying experiences in medicine. Various text-books usually recommend amounts of liver extract for this type of patient that are larger than necessary. Most patients respond well to one unit a day. However, it is our custom to err on the side of safety and give one cc. of concentrated liver extract (at least 15 units per cc.) intramuscularly three times during the first week, then the equivalent of one cc. every week or two thereafter until the erythrocytes return to normal in number and cell volume. After the blood is restored to normal the dose is regulated according to whatever is necessary to maintain the blood in a normal range. This varies greatly and must be determined for each individual. Some patients require 30 units every three weeks, others every four weeks, some only once every six weeks. If folic acid is used, 5 mg. per day by mouth is adequate for most patients. The dose of vitamin B_{12} is not yet established, but it appears that one microgram is equivalent to one unit of liver extract.

If the central nervous system involvement is present, the disease is much more serious. It is generally agreed that the longer the evidence of central nervous system involvement has existed, the poorer the chances are for complete recovery. The severity increases from peripheral neuritis, to dorsal columns, to classical subacute combined degeneration, and finally to subacute combined degeneration with loss of control of the vesical and rectal sphincter. It is accepted that the more extensive the involvement, the poorer the prognosis. Neurological involvement rarely develops or increases if the blood is kept normal. However, it does not follow that, if central nervous system involvement exists, treatment sufficient to restore the blood to normal is necessarily adequate treatment for the neurological lesions. Most authors state that patients with central nervous system disease require a larger dose of the drug than those without neurological disease, but their recommendation for the actual dosage is vague. Of course, this is the case because the exact figures are not known and the neurological response can not be measured as simply as that of the blood. It has been our practice to give 100 units a week for the first month of treatment, then 50 units per week for the next six months. Improvement in the neurological manifestations may not occur until after six months of therapy but improvement is usually evident sooner. Maximal improvement usually occurs within one or two years. Patients who have been properly diag-

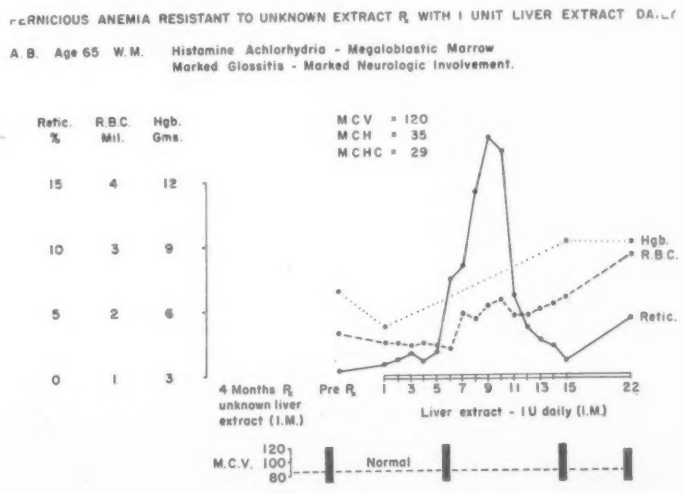
nosed, then inadequately treated over a period of years, may improve in a surprising manner when the treatment dosage is increased. For this reason we feel that a thorough trial with the large dosage schedule is indicated in every patient with neurological involvement no matter how extensive the involvement or how long the treatment has been inadequate. There appears to be no place for folic acid in treatment of the patient with pernicious anemia and neurological involvement. In several patients with moderately severe neurological involvement that we have treated with vitamin B_{12} it has appeared that improvement was quicker and greater than one usually sees in liver extract. Thus, even though the relative value of vitamin B_{12}, and liver extract remains to be determined, it would seem logical to try the other if one has not given the desired effects.

In the patient with severe neurological disease, bed rest and physiotherapy are important. A recent report by Hall *et al.*[4] emphasizes this often neglected aspect of treatment. Special attention to bladder drainage and infection of the gentio-urinary tract are often necessary. In selected cases of multiple deficiency, added vitamins or iron may be indicated, but these constitute a very small fraction of the patients with pernicious anemia.

Causes of Failure in Treatment: Inadequate treatment is probably the commonest cause of relapse. It is distressing to see a person who was properly diagnosed and adequately treated at one time, later develop a hematological relapse or neurological progression because of a lapse in treatment. Yet this is a frequent occurrence. Sometimes it occurs as a result of human frailty on the part of the patient, or lack of faith in what the physician tells him. At other times it may be due to difficulties in transportation. At other times the physician must take the blame. It is his duty to make the patient really understand that treatment must continue the remainder of the patient's life. The consequences of failure in this regard should be pointed out to the patient. It is also the physician's duty to examine the patient's neurological system and his blood often enough to be sure that he is giving adequate treatment.

Conditions that impair blood formation may interfere with proper response to treatment. Coincidental infection, especially the GU tract, may be responsible. Vascular disease and impaired renal function may prevent proper response to treatment. For several years we have followed a patient with chronic pyelonephritis and hypertension whose blood urea is generally in the neighborhood of 80 mg. per cent. We have not been able to get the erythrocyte count over 3.2 million in this patient despite massive amounts of all the anti-anemia preparations.

Marked neurological involvement is usually listed as a cause of failure to obtain satisfactory hematological response to therapy. Perhaps this is true, but our experience has led us to think that more often other associated factors such as vascular disease and infection are responsible. Certainly we have observed patients who were invalids because of advanced neurological lesions and yet were maintained


PERNICIOUS ANEMIA RESISTANT TO UNKNOWN EXTRACT Rx WITH I UNIT LIVER EXTRACT DAILY
A. B. Age 65 W. M. Histamine Achlorhydria - Megaloblastic Marrow
Marked Glossitis - Marked Neurologic Involvement.
Retic. % R.B.C. Mil. Hgb. Gms.
15 4 12
10 3 9
5 2 6
0 1 3
MCV = 120
MCH = 35
MCHC = 29
Hgb.
R.B.C.
Retic.
4 Months Rx unknown liver extract (I.M.)
Pre Rx
1 3 5 7 9 11 13 15 22
Liver extract - 1U daily (I.M.)
M.C.V. 120 100 80
Normal

with entirely normal blood values as long as the urinary tract was kept free of infection.

At times the development of carcinoma of the stomach may be first manifested by change in status of the blood. This rare complication is reported to be three times as frequent in patients with pernicious anemia as in a general population.[5]

A surprising cause of relapse is the presence on the market of liver extracts that are inert as far as the antipernicious-anemia factor is concerned. During the past year we have observed two such cases at the University of Virginia Hospital. In each instance the physician was apparently giving large doses of liver as judged by the listed unit value of the preparation. Each of these patients had a bone marrow that appeared megaloblastic and untreated, and each patient had a maximal response to one unit a day of a potent extract. An example of this type is presented in Chart VI. It seems likely that these extracts were never standardized before being marketed. This happening can be prevented by using only preparations made by well known reputable pharmaceutical houses.

The only reliable method of testing liver extracts is by trial on patients with pernicious anemia in relapse. We agree with Wintrobe[6] that it is the necessary duty of suitable patients with pernicious anemia to allow themselves to be used for testing for a reasonable time. The pharmaceutical houses pay hospitalization costs of suitable patients for this purpose in cooperating hospitals. To be suitable a patient should have a red blood count of less than 3.0 million, preferably less than 2.5 million, no neurological disease, and should not have received specific treatment or arsenic within a month.

SUMMARY AND CONCLUSIONS

1. Examples of the difficulty in diagnosis in certain patients with pernicious anemia are presented.
2. Satisfactory treatment schedules are outlined and the causes of failure are discussed.

CASE REPORTS

Mrs. L. T., Case I.—History: This 33 year old housewife was first admitted to the Medical Service of the University of Virginia Hospital in March, 1948, with paraplegia of the lower extremities and neurological signs of severe combined systems disease. She had noted symptoms of numbness and tingling of her feet 18 months prior to hospital admission and an inability to walk because of weakness and loss of control of her legs 12 months prior to hospitalization; at that time her red count was 3.5 millions and hemoglobin 12.5 grams. Erroneous diagnoses of cord tumor and multiple sclerosis were previously made.

Physical examination: Marked glossitis and neurological signs of severe combined systems disease including a paraplegia and urinary incontinence.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count 2.4 millions with 9.5 grams of hemoglobin; blood indices revealed a hyperchromic marocytic anemia.

Course: The patient was treated with intense liver therapy consisting of 15 units of concentrated liver extract daily for 39 hospital days and physiotherapy. A reticulocyte response of 11% was obtained and there was improvement; she regained bladder control, and she was able to move her toes and feet. On discharge her red blood count was 4.2 millions and hemoglobin 13.5 grams. She was advised to continue treatment at home consisting of 45 units of concentrated liver extract weekly and physiotherapy.

Comment: This is a case of pernicious anemia occurring in a young individual with mild anemia and marked neurological complications illustrating the lack of correlation between the severity of the anemia and degree of neurological involvement.

Mr. E. T., Case II.—History: This 68 year old white male was admitted to the University of Virginia Hospital on November 29, 1947, with the complaints of marked weakness and dyspnea of one year's duration. He had also noted ankle edema, anorexia, weight loss, and "yellow skin". He gave no symptoms of glossitis or paresthesias of the hands and feet.

Physical examination: Grey hair, yellow skin, atrophic tongue, and normal neurologic findings.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count of 0.99 millions and hemoglobin of 4.0 grams, and blood indices revealed a hyperchromic macrocytic anemia.

Course: The patient was treated with an "unknown" liver extract for ten days with no significant response; he was then given 1 cc. of "Reticulogen" daily and on the 5th day of this therapy a reticulocyte response of 39% was obtained. The patient was discharged symptomatically improved.

On February 5, 1948, five weeks after discharge, the patient had 3.5 million red blood cells and hemoglobin of 9.5 grams.

Comment: This is a case of pernicious anemia with severe anemia showing no neurological involvement.

J. H., Case III.—History: This 50 year old negro woman was admitted to the University of Virginia Hospital on September 28, 1948, with the complaints of weakness, anorexia, weight loss of two years duration. Fourteen years prior to admission she had a massive hemorrhage from a ruptured ectopic pregnancy and required transfusions at that time. For the year prior to admission she had noted numbness and tingling in her hands and feet. Three months prior to admission she was told by her physician that she was anemic and was given two blood transfusions.

Physical examination: Mild glossitis and no abnormal neurological findings.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count of 1.94 millions with 5.8 grams of hemoglobin, and normal blood indices.

Course: A diagnosis of pernicious anemia was made and the patient was given 1 cc. of "Unknown" liver extract daily for ten days with less than the expected reticulocyte response being obtained; she was then given 1 cc. of "Reticulogen" daily for eight days with a reticulocyte response of 17%. The patient was discharged from the hospital on October 21, 1948, and was continued on 1 cc. of "Reticulogen" weekly at home. She returned to the Hematology Clinic on November 2, 1948, and January 28, 1949; on the latter date her red blood count was 4.42 million with 14 grams of hemoglobin.

Comment: This illustrates the occurrence in a negro of pernicious anemia associated with normal blood indices. She gave a history of blood loss in the past and was treated with blood transfusions before a diagnosis of pernicious anemia was made.

Mr. A. B., Case VI.—History: This 65 year old white male was admitted to the University of Virginia Hospital on February 9, 1948, with a history of marked anemia and symptoms of severe combined systems disease occurring ten years prior to admission. At the same time he had marked ankle edema. He received daily liver injections at that time with marked improvement of his anemia and general condition. He was maintained on frequent injections of liver extracts until four months prior to admission. At that time he developed severe anemia, weakness, and marked dependent edema. He was given large doses of parenteral liver for four months without improvement of his anemia, symptoms, or edema. He was then referred to the hospital for diagnosis.

Physical examination: Marked glossitis, marked neurological signs of combined systems disease, and marked edema of the lower extremities.

Laboratory: Histamine achlorhydria, megaloblastic bone marrow, red blood count of 1.6 millions with a hemoglobin of 8 grams; blood indices revealed a macrocytic anemia. Total serum proteins were 3.6 mgm. per cent.

Course: The patient received daily injections of 1 unit of a concentrated liver extract and on the 9th day of therapy a reticulocyte response of 18.4% was obtained. On discharge from the hospital on March 25, 1948, the red blood count had risen to 3.2 millions and the hemoglobin to 9.7 grams. The patient's hypoproteinemia was treated by diet and protein hydrolysate supplements and the total serum proteins on discharge were 5.8 mgm. per cent. The patient was symptomatically improved and there was marked neurological improvement.

Comment: This patient with pernicious anemia received large amounts of a commercial liver extract for four months, that was evidently inert, without benefit. He then responded in typical fashion to 1 unit of a potent liver extract when given daily by injection.

BIBLIOGRAPHY

1. Minot, G. R., and Murphy, W. P.: The Treatment of Pernicious Anemia by Special Diet. *Jour. Amer. Med. Assoc.* **87**:470-476 (August 14), 1926.
2. Hicks, Myers, and Leavell, B. S.: (In Press).
3. Goodman, L., and Gilman, T.: The Pharmacological Basis of Therapeutics, 429, The Memican Co., N. Y.
4. Hall, B. E., Kraser, F. H., and Woltman, H. W.: Degeneration of Spinal Cord in Pernicious Anemia. *Jour. Amer. Med. Assoc.* **141**:257-260 (September 14), 1949
5. Kaplan, H. S., and Rigler, L. G.: Pernicious Anemia and Carcinoma of the Stomach—Autopsy Studies Concerning Their Interrelationship. *Am. Jour. Med Sci.* **209**:339, 1945.
6. Wintrobe, M. M.: Clinical Hematology. (1st Ed. pg. 276) Lea and Febiger, Phil.

XUM

DISCUSSION

DR. JOHN B. MCKEE, Winchester: In his usual competent and concise manner, Dr. Leavell has discussed the important factors to be considered in the management of pernicious anemia. One of these is the importance of accurate diagnosis before therapy is started. We have brought to our attention by literature and detail men countless preparations containing vitamins, liver, iron, folic acid, etc., coming at a high price and touted as the cure-all for anemia, without reference to the underlying nature of the anemia. As Dr. Leavell has pointed out, the prescribing of such preparations prior to accurate diagnosis is very dangerous. In the case of secondary anemias, it may lead one to overlook the hidden disease process, such as a malignancy. In case of pernicious anemia, it is likely to so mask the normal progression of the disease as to lead to the development of a considerable degree of neurological damage.

The other point which I would like to emphasize is the accurate evaluation of macrocytic anemias. It is important both from the standpoint of therapy and prognosis that the diagnosis not be made on the basis of the blood smear alone. Macrocytic anemias in the elderly are quite likely to be due to aplastic anemia or to gastric malignancy; liver disease is also a cause of such anemias. The failure to make a proper diagnosis in such cases and to give a favorable prognosis when the outcome is likely to be fatal can prove to be most embarrassing.

DR. GEORGE B. CRADDOCK, Lynchburg: I have been told that carcinoma of the stomach develops in greater frequency in patients with pernicious anemia than it does in patients without pernicious anemia, and I should like to ask Dr. Leavell how often he checks the stomach in pernicious anemia patients with X-ray or other means for that.

DR. LEAVELL, closing the discussion: I want to thank Dr. McKee for his discussion.

As to Dr. Craddock's question, that is one thing we left out because of lack of time. Studies indicate that carcinoma of the stomach occurs about three times as frequently in pernicious-anemia patients as in other persons. When a patient is under treatment and has responded well but begins to look badly the possibility of carcinoma of the stomach should be suspected and it should be looked for. Probably X-ray of the stomach should be done every six months.

Of course, people with carcinoma of the stomach may develop macrocytic anemia, but they do not have the typical findings of pernicious anemia.

Bibliotheca Obstetrica

TARNIER, STÉPHANE, 1828-1897. Recherches sur l'état puerpéral et sur less maladies des femmes en couches. Thesis, Paris, Rignoux, Imprimeur de la Faculté de Médecine, 1857.

Tarnier (Stéphane or Étienne) is best remembered as the inventor of a very successful axis traction forceps. He was the first to use a milk diet as prophylaxis in pre-eclampsia, also the first to use Listerism in obstetrics. The Encyclopedia Britannica shows a picture of an incubator designed by him.

Tarnier was born at Ayserey (Côte-d'Or) April 26, 1828 and died in Paris, November 24, 1897. He began his medical studies in Dijon, but completed them in Paris where he taught and did most of his work.

XUM

XUM

Medical Society of Virginia Cancer Committee

Chairman, GEORGE COOPER, JR., M. D.

Medical School Building, University, Virginia

Reprints of this and preceeding Bulletins may be obtained from this office

December 1, 1950

Case Reports

A 47-year-old man asked his doctor's advice about a red, scaly, itching lesion on his left cheek. Present for about six months, it had grown slowly, reaching a diameter of 1.5 cm. and a thickness of 0.5 cm. Lesions similar in appearance had recently appeared on the chin and right cheek.

The doctor inspected them, decided they were due to a fungus infection, and prescribed a salve. For six months, no diagnostic procedure (other than inspection) was carried out, the same diagnosis was persisted in, and the same treatment advised, although all three lesions were unaffected and continued their slow growth. When the largest one on the left cheek began to ooze blood, the patient visited another doctor who took a biopsy specimen from its margin. The pathological report was epidermoid carcinoma, grade I to II. Roentgen therapy of all three lesions was followed by their complete disappearance. *Comment:* 1. The failure of the first physician to differentiate accurately by visual inspection between skin infection and carcinoma cannot be justly criticized. But his reliance on visual inspection must be. No matter how clearcut the diagnosis seemed at the patient's first visit, the failure of the lesions to respond to treatment should have aroused suspicion that the first impression was erroneous. A biopsy should have been taken within the first two or three weeks.

2. Through the Bureau of Cancer Control, State Health Department, Richmond, free pathological diagnosis may be promptly obtained. Every physician in Virginia has been informed repeatedly of this service, which removes all practical and economic obstacles from the taking of biopsies.

3. This case history illustrates well the three most common causes of physician responsibility for delayed cancer diagnosis:

a. Failure to think of cancer as a diagnostic possibility;

b. Treatment of conditions, the etiology of which has not been determined;

c. Unwillingness to reconsider an initial opinion when the response to treatment is not prompt.

XUM

XUM

XUM

THE DIAGNOSIS AND TREATMENT OF TRICHOMONAS VAGINALIS

ROBERT THRIFT FERGUSON, M.D., F.A.C.S.,
and
GLENN S. EDGERTON, M.D., F.A.C.S.,
Charlotte, North Carolina.

About ten years ago I became interested in the treatment of Trichomonas vaginalis because I had seen so many patients with a foul vaginal discharge that were apparently incurable with any method known at that time. I found that in practically all of these patients the microscope showed a multitude of Trichomonas in the vaginal discharge. I have kept a complete record and follow-up on all my patients, and, since I have seen more that 600. I have decided to put into print what I have learned for the benefit of my fellow practitioners, as well as for the patients who have been so unfortunate as to develop this disease.

The etiology of Trichomonas is still a mystery, and, although I have spent many years working with it, I am still as far from the knowledge of its origin and mode of transmission as ever. Many of the patients in this series lived in homes with several other women who used the same toilet and bath facilities and none of the others were infected. The discharge of many husbands has been examined and I have found only one who showed the disease. I have also examined the rectal discharge from many of these women and have yet to find a single Trichomonad.

The symptoms are so definite that they cannot be mistaken. Practically every patient with the disease has the following five, which I would call the cardinal symptoms: leukorrhea, itching, burning, irritation and odor. When a patient appears with this set of symptoms your diagnosis is almost certain, but with this condition you cannot afford to do any guess work, especially when the diagnosis is so simple; therefore, every one must have a specimen put under the microscope to confirm the diagnosis. The morphology of the Trichomonas is unique. There are many shapes and forms which vary from a perfectly round cell to quadrangular, ovoid, carrot-shaped or irregular. Many contain flagellae and many do not, so you must be very familiar with the various shapes to enable you to make a diagnosis. The movement is characteristic, when present, but often there is no movement at all.

It is only necessary to place a drop of the vaginal discharge on a slide mixed with a drop of normal saline solution to make the diagnosis.

The question is frequently asked: "Is this a venereal disease"? My answer is definitely not.

Unless one is willing to give hours upon hours in the diagnosis and treatment of this condition, then he should refer the patient to some one who will. The treatment cannot be carried out without a microscope. It is impossible always to find the parasite at the first examination and it will be necessary to make repeated examinations without the patient having had any vaginal treatment in the meantime. A simple douche with salt or vinegar will frequently prevent finding the parasites. It is absolutely necessary to know that they are present before the treatment is begun; else you will never know whether the patient actually had the infection and will not know when she is cured. I have discovered that practically all vaginal discharges will be cured with this treatment.

The length of time necessary to treat any patient will be determined by that individual. The longest time it has taken me to cure one was five years and she reported to the office one year later and had remained well. A specimen of the discharge must be placed under the microscope at every treatment to determine the progress and know when the patient is free. Long experience has proved that it will be necessary to give a treatment every day at first, then every other day, then twice a week, and later once a week until the patient has passed two menstrual periods free; and now we have them return after each period for the next two months to make sure that there has been no recurrence. A patient may remain free for the entire month and when the period returns the parasites show up again. Treating patients during the menstrual periods is rarely necessary and it is of little value because the drug is washed away with the menstrual flow. If they do not have a return in six months I consider them cured. Nothing under this can be considered, for occasionally a patient has remained free for three months and then had a relapse. When the disease recurs after six months I class it as a reinfection,

XUM

and I have had a few to do this. I have noticed when a reinfection does occur, they are quickly cured and I rarely find a parasite after the first treatment, although the treatment must be carried out as formerly until the patient has passed two menstrual periods free. I have had only one with a second reinfection and she was quickly cured.

Douches will give temporary relief only and my patients are instructed not to take another while under treatment, and they will not need one. I recall hearing Dr. Will Mayo say at one of his clinics thirty-five years ago that douches never cured a woman of leukorrhea. I have had many patients tell me that they had been taking douches three times a day for a year under instruction from their physician and without relief: Think of what a burden this must be to a woman!

The odor of this disease is almost symptomatic and is so distressing that it makes a patient ashamed to go out in society. The treatment I have used relieves 95% of the patients of all symptoms immediately, and if they will return as directed they will remain free. The intensity of the symptoms will vary with the patient; in some they are mild, and in three of this series all symptoms were absent and the parasites were found on routine examination. This makes it much more imperative to examine the discharge from every woman.

The itching is terrific with some, and present with practically all. The irritation is sometimes almost incapacitating and the patient can walk with difficulty, and the inflamed areas sometimes extend down six to eight inches on the thighs. This is generally relieved with the first treatment.

Trichomonas occurs most frequently in the vagina, next in the urethra, and finally in the bladder. So far as I have been able to determine, it is a local disease and the parasites do not pass beyond the internal os.

All of the bladder cases I have seen have been cured with either one or two treatments. Those occurring in the urethra are slow to improve, and in the vagina the time is very indefinite. All patients obtain such relief that most of them will return if it is at all possible. A few are entirely relieved after a few treatments and fail to return. A half dozen of this series never had a parasite after the first treatment, and this is the goal for which I have been striving.

I have found that in almost every instance when one of these patients has been cured and has a return of any one of the symptoms, they are back for a recheck immediately.

The drugs that have been used in the treatment of this condition are multitudinous but I have failed to find a cure with any of them. I will mention a few of those I tried in the early stages without any permanent results: douches with salt, soda, vinegar, boric acid, trichotine, stomaseptine, potassium permanganate, soap, lysol, bichloride of mercury, argyrol preparations, etc. Failing with any of these I tried painting the vagina with iodine, ether, alcohol, silver nitrate, argyrol, bismuth violet, silver picrate blown into the vagina, and various other silver preparations without relief. Devegan and floraquin tablets placed in the posterior vaginal vault are the best of this type but have not been curative in my hands. I also tried sulfa drugs and penicillin in the vagina but on repeated examinations of the vaginal discharge following this the parasites were still alive.

The accepted treatments for gonorrhea and syphilis have no effect on the parasites. I could always find them present and alive in great numbers while the vagina was filled with silver picrate. This demonstrates the value of the microscope. With this array of drugs there is no wonder that the average physician becomes disgusted and dismisses the patient with a douche.

In studying this condition in the hospitals of Chicago and New York I was surprised to find that they saw several thousand cases a year with this disease who were given treatment with one of the above and told to return if they did not get relief, but none of them had done any follow-up work and had no way of determining the result.

Prior to my study of this disease I saw many patients with foul smelling discharges, itching, burning, irritation and odor who I was unable to cure and that caused me to undertake the present study. Since the discovery of the present treatment my patients have not only continued to come but have sent their friends suffering with like symptoms. I have found that the best method to keep the patients coming for treatment is to show them the parasites under the microscope and they will exclaim "Do I have those things running around in me"?

Now for the treatment: I first begun to use mercurochrome in a 2% solution with very limited

results; then I had a patient with the parasites in the bladder and found that she was cured with one injection of mercurochrome (1%) in the bladder. This gave me an idea that maybe a stronger solution might be valuable in the vagina, so I stepped the strength up to 5%, then 10%, 15%, 20%, 25%, 40%, 50%, 75%, and finally to 100% dissolved in water. Later I discovered that a 75% solution was equally as effective, and also due to the fact that the drug is quite expensive, I have continued to use the 75% strength with admirable results.

Up to one year ago I had made a diagnosis of Trichomonas in 600 women and have kept a complete record on each with the following results: 228 of this number had one or more treatments after the diagnosis and failed to return. Some of them had a few treatments and thought they were cured and did not return. The majority of these 228 had only the diagnosis and treatment at the time and did not return. Many lived a long way from Charlotte, and some in other states, and did not find it convenient to return. It was surprising how many of them lived as much as 100 miles or more from the office and came regularly twice a week, or oftener at first, and continued the treatment till they were cured, and they have been followed from one to ten years and have remained well. This leaves 372 who continued the treatment till they were cured.

The total number of treatments for the 600 patients was 11,983 and the average number was 32.6. The total number of months of treatment was 6,240, and the average number per patient was 17. So you can readily see that I have put a good many hours into this work. Many of these were cured in three months, and with comparatively few treatments, while others took many months.

The number of reinfections was 29, or 7.9%. Six patients became pregnant soon after the treatment was begun and a number were treated while they were pregnant. Only two of the patients had active gonorrhea, but many gave a history of having had the disease. One had syphilis. I do not recall a single patient who had a history of gonorrhea who did not have Trichomonas. I used to think that filth, and especially gonorrhea, was always the cause, but I found that some of the nicest and cleanest women were infected. A number of these patients were virgins and this would ordinarily preclude any gonorrheal infection. Five of the patients were still being treated when this paper was begun so they are not included in the final result.

The detailed treatment consists in placing the patient on the table in the dorsal position, speculum inserted, and a drop of the vaginal discharge placed on a slide with a drop of normal saline solution and placed under the microscope, when the Trichomonads are easily recognized. The vagina is carefully swabbed with absorbent cotton to render it as dry as possible and painted with 75% solution of mercurochrome. The solution is also put in the cervix, being very careful that it does not pass the internal os, or it will set up uterine spasm. If the infection has spread to the urethra this is carefully treated with a fine probe wrapped with cotton and inserted the entire length of the urethra. If the vulval walls and tissues of the thighs and pubis are irritated they are also painted. The first treatment causes severe burning which lasts for from five to ten minutes and then subsides. The Trichomonads irritate and appear to dissolve the mucous membranes, leaving them red and raw, but healing takes place rapidly following treatment and there is very little discomfort after the first treatment.

The Trichomonads will live indefinitely in normal saline solution at proper temperature and I have frequently placed them in a bottle in the morning and taken them to the hospital in the evening for demonstration to a class of nurses.

I have noticed a very striking incidence of relief from backache in a number of these patients. They told me that they had daily backache for months and after the first few treatments were entirely relieved and permanently so.

In closing, I wish to call your attention to the oxytocic action of concentrated solutions of mercurochrome, which is very powerful, and, when put in the uterus, sets up violent contractions. This should be borne in mind when treating pregnant women or an abortion will almost certainly follow.

I want to take this opportunity to thank the many physicians who have referred patients to me for treatment. I also wish to thank my associate Dr. Glenn S. Edgerton for his assistance in treating many of the later cases in this series while I was incapacitated.

614-616 Professional Building.

XUM

HYPERPARATHYROIDISM

J. B. S. PERROW, M.D.,
Lynchburg, Virginia.

DEFINITION: Hyperparathyroidism, or osteitis fibrosa cystica, may be defined as an endocrine disease, affecting the parathyroid glands and characterized primarily by an increase in the serum calcium, an increased excretion of calcium in the urine, and by decalcification of the skeletal system.

HISTORY: Von Recklinghausen in 1891 first described the skeletal manifestations of the disease and differentiated osteitis fibrosa cystica from osteomalacia and osteoclastic metastasis of bone. In 1904 Askanazy first commented on the presence of a tumor of the parathyroid gland in a case of osteitis fibrosa cystica. In 1907 Erdheim noted that the parathyroid glands were hyperplastic in bone diseases with skeletal decalcification and believed that the liberation of calcium and phosphorus caused hypertrophy and hyperplasia of the glands. In trying to prove Erdheim's belief, Mandl in 1925 transplanted parathyroid glands into the abdominal wall of a man suffering from osteitis fibrosa cystica. The disease process appeared to have been made worse, so he explored the patient's neck and found a parathyroid adenoma which, upon removal, cured the patient of his disease. Since that time numerous cases of hyperparathyroidism have been discovered and treated by surgical removal of the causative glands. As knowledge of the parathyroid glands has increased, the index of suspicion has risen and dysfunction of this gland has been found more often, especially borderline and less far advanced cases. However, hyperparathyroidism is by no means a *common* disease and one might practice medicine for many years without seeing a single clear-cut case.

SYMPTOMS AND SIGNS: The symptoms and signs of hyperparathyroidism have usually existed for years before some physician finally notices one outstanding development which directs his attention to the possibility of the presence of a metabolic disease of the parathyroid glands. Thereupon, closer probing into the past history and rescrutinizing past treatments and experiences with the patient, brings to light a series of developments, about which the patient had liberally complained but which his physician had not fitted correctly into their places as parts of the jig-saw puzzle going to make up parathyroid disease.

After analyzing a few of the cases that have been reported since 1940, certain facts were noted which were of interest and enlightening because these things were of a nature that the average physician does not usually associate with hyperparathyroidism. Also, although the patient's complaints were loud, many of them being objective as well as subjective, they were either ignored or else attributed to that catch-basket of psychosomatic disorders. Neurasthenia, malnutrition, vague rheumatic pains, senile changes, mild chronic nephritis all too easily may account for most of the patient's difficulties as he first presents himself. Having been guilty of this very thing myself, I therewith resolved to hereafter pay more attention and give more thought to my patient's woes whether I believe them to be organic in origin or not.

A study of cases shows that the presenting complaint and most prominent symptom of all was *pain in the bones and joints*. In some cases it is so severe as to require narcotics for relief, but most complain of a moderate aching pain through the back, hips and pelvis, particularly pain on weight bearing. The average case has complained of pain for from 2 to 3 years before the correct diagnosis was made.

The second most prominent symptom was muscular weakness and easy fatigue to such a degree as to interfere with their everyday work which previously had been carried out with no undue difficulty. This may at times be so marked as to cause the patient to become a semi-invalid. The average duration of this complaint was from 5 to 6 years.

The third most prominent complaint was the occurrence of a fractured bone by force which though not necessarily slight was usually not severe. The important thing about the fracture is that usually these patients have a history of repeated fractures incurred with questionable amounts of force. Also, we may note bone cysts which form commonly can easily be mistaken for metastatic carcinoma or other decalcifying or cyst-forming processes. Fractures may occur at the sites of these cysts especially if they should be located in the lower extremities where

XUM

weight bearing is a factor.

The fourth most prominent symptom or group of symptoms were those related to the genito-urinary organs and were the results of the deposition of calcium phosphate in the genito-urinary tract. In 1934 Fuller Albright classified the renal pathology of hyperparathyroid disease under three main headings:

1. *Pyelonephritis* secondary to the formation of calcium phosphate stones in the kidney pelves. This appears to be the most commonly encountered and commonly over-looked genito-urinary disturbance in this disorder. The symptoms associated with the process are identical with those of any calculus located in this organ. It should be emphasized that particular attention should be given when there is a history of having had repeated episodes with renal calculi.

2. *Nephrocalcinosis,* in which the deposits are located in the kidney parenchyma instead of the pelvis. Here a condition that may resemble chronic nephritis may occur. Inflammatory changes about the deposits take place, followed by sclerosis and contracted kidneys.

3. *Acute severe parathyroid poisoning* with calcium deposits in the kidney as well as other organs and terminal anuria. This appears to be about the same process as given above except that it occurs rapidly and there is no time for sclerosis and contraction to take place.

The fifth most prominent symptom and occasionally the one that directs attention toward the correct diagnosis is polyuria and polydipsia. The taking of water and the volume of urine may not be so great as to in itself lead one to believe that renal or parathyroid disease exists. Rather there is usually a moderate polyuria and polydipsia which may amount to 2,000 or 3,000 c.c. of urine and the consumption of 3,000 to 4,000 c.c. of liquid. Superficially this may not seem to be and is not any great quantity but it is sufficient to cause most victims of this disease, when inquired into, to voice the opinion that they drink a great deal of water and pass a great deal of urine—much more than most people they are quite sure. Occasionally polyuria and polydipsia will be one of the chief complaints. It was found this had been noticed by the patient for an average of seven to eight years before the correct diagnosis was made.

To recapitulate: Five of the most outstanding factors to be looked for in the history of a case of hyperparathyroidism are:

1. Pain in bones and joints
2. Muscular weakness
3. Repeated fractures of bones
4. Genito-urinary calculi
5. Polyuria and polydipsia.

There are many other signs and symptoms which occur but they are not quite so directive and, indeed, often serve to obscure the true diagnosis and lead us to do many procedures which show nothing conclusive and usually serve only to falsely ensure us in our wrong impression which is often psychosomatic disease or one of those given previously. Many patients have anorexia, nausea, attacks of gas, belching, constipation, bouts of vomiting. Cardiac irregularities and conduction defects occur occasionally. Epulis, which is a small connective tissue tumor occurring on the gums, is seen occasionally. Patients sometimes give a history of having had one removed sometime before the true disease is recognized.

DIAGNOSIS: The diagnosis of hyperparathyroidism is based primarily upon the chemical examination of the blood. It is not difficult to arrive at a correct diagnosis in a patient who has polyuria, polydipsia, pains in his bones, weakness; who has had bone fractures and whose roentgenograms show typical osteitis fibrosa cystica, and whose blood shows hypercalcemia. Such a classical case is not the rule, however, and, when seen, represents a far advanced one in which the true diagnosis has usually been missed by more than one physician. It *is* true that the roentgenologist is often the first to suggest the diagnosis of hyperparathyroidism when it had been unsuspected clinically. This is unfortunate, for bone changes appear to be dependent largely upon the duration of the disease and not upon the degree of hyperparathyroidism. Dietary habits also influence the degree of bone changes and those who consume large quantities of milk or calcium containing foods do not so often show marked decalcification. Never the less, roentgenological evidence of bone changes and abnormal calcium phosphate deposits are very important factors in arriving at a diagnosis. Mild or less far advanced cases who fail to show roentgenological evidence of the disease are very difficult problems and, without the confirmatory proof of accurate laboratory studies of the blood, the true diagnosis cannot be reached with any degree of certainty. There are four important examinations

XUM

to be made upon the blood. These are:

Serum total calcium—normally 9 to 11 mg. %.

Serum inorganic phosphorus—normally 2.5 to 4.5 mg. %.

Serum phosphatase—normally 2-5 Bodansky units %.

Serum total proteins—normally 7 gm. %.

To go into great detail about all possible variations of the biochemical findings would take too much time and space and would require considerable more knowledge than I possess. However, there are a few important items which will be mentioned. In the majority of cases, 90 to 95%, serum calcium will be over 11 mg. per 100 cc. Serum phosphorus will be less than 2.5 mg. % in approximately ½ the cases. In patients in whom renal insufficiency has become marked, phosphorus may be retained and the serum content be normal or even high, with a correspondingly low serum calcium.

The amount of phosphatase present and given in units is considered to indicate the degree of activity of the mechanism of bone repair. There are many conditions besides hyperparathyroidism in which serum phosphatase may be elevated, or, more properly, its activity increased, for phosphatase is an enzyme. Among them are Paget's disease, rickets, osteomalacia, extensive fractures, some cases of wide spread skeletal metastasis from carcinoma. Phosphatase activity determination is important because, if it is high preoperatively, the likelihood of postoperative tetany is great and early symptoms of tetany should be looked for and treated as they arise.

Calcium excretion in the urine is an additional test which may be done when the results of the serum examinations are inconclusive. The total quantity of calcium excreted in the urine of a normal person when on a low calcium diet is 100 mg. or less. On a similar diet a person with hyperparathyroidism will excrete from 150 to 400 or 500 mg. of calcium. Again, renal insufficiency may reduce this to a fraction of that expected.

A simple and inexpensive test for determining the approximate amount of calcium excreted in the urine is the Sulkowitch test* (*Med. Clinics of North Am.*, July, 1940, Page 1030) which is done by simply adding an equal amount of Sulkowitch's reagent and urine together in a test tube. A milky color means an excessive excretion of calcium and possibly a high blood calcium. A fine white cloud indicates approximately normal serum range. No precipitate means no calcium is being excreted and the serum level is probably below 7.5 mg. %. To be of value this test should be done while the patient is taking a moderately low calcium diet. It may be done on the 24 hr. total specimen or it may be done on the morning specimen, collected before breakfast, and following a supper without high calcium content foods such as milk or milk products.

Serum protein determination is quite important, especially in border-line cases where the calcium report is not particularly high. It has been shown that lowering of serum proteins will lower the total calcium approximately .75 mg. for each gram of protein (McLeon and Hastings; *Am. J. Med. Sci.*, **189**:601, 1935). Thus it is seen that in a case with a serum calcium of 11.5 and a total protein of 6, the calculated true serum calcium would then be 11.5 plus .75 or 12.25 mg. per cent, a difference which might be significant.

TREATMENT: Once the diagnosis has been established, surgery offers the patient his only chance of cure. At operation usually a single tumor may be found and removed. The most careful and meticulous dissection is necessary in order to find and identify normal parathyroid tissue and to find and distinguish abnormal glands. It has been possible to divide cases into two groups (Castleman and Mallory; *Am. J. Path.*, **11**:1, 1935) according to the histological changes in the glands. One of them is characterized by a diffuse uniform hyperplastic process throughout all the parathyroid glands, and is called primary hyperplasia. It is usually due to the Wasserhelle cells. The second, an adenoma, usually involves only one parathyroid gland and is composed of chief cells. Thus in the first type, unless nearly all of the parathyroid tissue is removed, the disease will not be cured. In the second type, usually only one tumorous gland has to be removed.

The prognosis of those cases discovered before renal insufficiency has developed and properly treated by surgery is excellent. However, once renal damage has occurred it is permanent. The continuation and advance of the process of calcification may be arrested by surgery and the prognosis then depends upon the amount of renal or other damage already

***Sulkowitch Reagent: "Two and five-tenths gm. of oxalic acid, 2.5 gm. of ammonium oxalate and 5 c.c. of glacial acetic acid are dissolved in distilled water and made up to a volume of 150 c.c."**

done, but there is no resorption of calcium already deposited in the tissues and organs.

The first few days following operation are the most dangerous. This is the period during which tetany is most likely to develop. Also, these patients are prone to develop oliguria and uremia. Parenteral fluid should be given—1,000 cc. of glucose in distilled water every eight hours. Calcium should be given intravenously at the earliest sign of increasing muscle irritability. Calcium chloride is the most effective form of calcium and, if given with great care, diluted in an infusion, is probably the best form to use. From 10 to 30 cc. of 10% solution may be given depending upon the severity and acuteness of tetany. Calcium gluconate will accomplish the same result without the dangers of causing tissue necrosis but twice as much of it has to be used. In most cases it is possible to give calcium orally, and then large doses must be given. Two to 5 gm. every 20 to 30 min., dissolved in hot water, should be given when the immediate danger of tetany is at hand. Unless the calcium (lactate is best) is dissolved, very little of it will be absorbed. Once the acute stage of tetany has passed, maintenance doses are begun and vary from 2 gm. up to 10 gm. four or five times daily. Each case must be worked out by observation, trial and error. The use of the Sulkowitch test now becomes extremely important and affords an easy method to keep tab upon the relative serum calcium level. In conjunction with oral calcium, dilute hydrochloric acid and moderate doses of vitamin D_2 help to bring about absorption of calcium from the gastrointestional tract. The very large doses of vitamin D_2 once advocated are not now recommended. It should be used in the form of calciferol, which is a crystalline substance prepared by ultraviolet irradiation of ergosterol. It is effective by mouth and its effects continue 1 to 2 months after discontinuing medication. Dosage varies greatly but usually acute cases may be given 5,000 to 10,000 units daily, and resistant cases many times more. However, rarely are larger doses needed when other drugs as given herein are used simultaneously. The usual maintenance dose is about 1,000 units daily. Calciferol is antirachitic and primarily exerts its effect by aiding in the absorption of calcium from the gastrointestional tract.

The advent in 1934 of dihydrotachysterol (known as A.T. 10) greatly improved the outlook of those who developed persistent or chronic forms of tetany following parathyroid operations or injuries. This drug, as is calciferol, is a fraction of irradiated ergosterol and has the ability to bring about increased calcium absorption and increased phosphorus excretion. Its action is slow and several days of medication are necessary before its full effect is seen. Less calcium orally need be given when A.T. 10 is used. Usual doses of A.T. 10 range from 2 to 5 cc. weekly for maintenance but initially 3 or 4 cc. daily must be given for several days. Caution must be used with A.T. 10, as too large a dosage may produce hypercalcemia, as in the initial hyperparathyroidism. In chronic cases it can be continued indefinitely, but most patients may gradually discontinue it after several weeks or months. A.T. 10 is peculiar in that although it brings about calcium absorption it has no antirachitic properties. It is available in oil under the trade name of Hytakerol, by Winthrop. Each cc. contains 1.25 mg.

Parathyroid hormone is available as a standardized extract of the parathyroid gland. It is recommended in the treatment of acute tetany of parathyroid disease for emergency and temporary treatment only. It must be administered hypodermically and if given in doses of 1 to 3 cc. will raise the serum calcium level within a few hours. To maintain this elevation smaller doses, .2 to .4 cc. must be given every 12 hours. When parathyroid hormone is used, it usually is in a critically ill patient who is unable to take oral medication. As soon as recovery has occurred to the extent that the patient can swallow, oral medication is begun with other drugs and the hormone gradually tapered off over several days. Patients become resistent to the hormone if continued very long, and increasingly larger doses are needed. Hence it is important to start oral treatment as soon as possible.

In the follow-up of patients having hyperparathyroidism who have undergone operation there are two important events to be kept in mind. One is the possibility that the disease may not have been cured —primarily because not all or not enough parathyroid tissue was removed. In that case the findings of the original disease persist and further operative exploration must be done. The second possibility is the development of tetany. The acute form comes in the immediate post-operative period, and treatment has been outlined above. There is no set order

XUM

of onset of symptoms. At times the sudden occurrence without warning of a generalized convulsion may necessitate every emergency measure at our command. As a rule, however, there are warning signs. Visual difficulty and blurring of vision may be the first sign and may be present for several days before other complaints develop. Numbness of the hands, face, or legs, with tingling is commonly noted. The so-called "carpopedal spasm" does occur but not as commonly as other symptoms. Chevostek's sign, elicited by tapping over the facial nerve and in positive cases noting the spasm of facial muscles on the corresponding side, is usually positive. Trousseau's sign is elicited by constriction of the upper arm and noting spasm of the muscles in the forearm below. It becomes positive after Chevostek's but is the more reliable sign of the two. In some cases a chronic form of parathyroid insufficiency develops which may give rise to many vague complaints. Unless the possibility of chronic hypocalcemia is kept in mind, considerable harm and damage may be done to the patient. The absence of actual tetany does not rule out parathyroid insufficiency because certain patients gradually become accustomed to a low serum calcium and are able to carry on to some extent in spite of their complaints. One of the most serious of the disturbances that may occur is the formation of bilateral cataracts. Once formed, they cannot be changed by treatment. Weakness, disturbances in nail growth, crying spells without apparent cause, mental changes and retardation, areas of brain calcification may develop if the state of chronic tetany is allowed to persist long enough. Indeed, with such an array of vague complaints one must keep in mind the possibility of chronic tetany in any patient who has had a thyroid gland or parathyroid gland operation and whose complaints cannot be accounted for otherwise.

One case encountered in private practice is herewith presented.

Mr. C. H. T., Sr., aged 60 (Aug. 31, 1948)

Past History: The patient had the usual childhood diseases, all with good recovery. Pneumonia at 18 yrs. of age with no complications. In 1931 the semilunar cartilage was removed from the right knee following an injury. In 1933 a fracture of the left patella was sustained in an automobile accident and repaired by open reduction. In 1947 the patient stumbled. fell backwards injurying his left elbow. X-ray showed a small fragment broken from the olecranon process. This was repaired at open operation. It was noted at that time that the fragments did not show up well on the X-ray plates and at operation they seemed unduly fragile.

C.R.—Negative.

G.I.—Was treated for stomach trouble in 1943 for about 1½ yrs. Diagnosed as "hyperacidity". Otherwise negative.

N.M.—Negative.

G.U.—Nocturia one time for 3 or 4 years. For about 10 years prior to the present illness he has "loved water and always drank a lot of it". He consumed about 8 to 10 glasses daily, and passed a lot of urine during the day but was not bothered at night with having to void other than the one time given above. In 1946 he was examined by several physicians because of pain in the back and sacral region. He was told that he had a little prostate gland trouble and a little pus in the urine. He was treated for about three weeks and dismissed.

F.H.—No familial diseases. Two brothers and one sister alive and well. One sister died at 26 yrs. of age following an operation for "tumor" "between the kidneys". Wife and five children alive and well. Mother and father died at 73 and 83 yrs. of age of pneumonia and hardening of the arteries.

Present Illness. The patient presented himself during January, 1948, with complaints of pain in the back and sacrum and with weakness. Pain had gradually developed over a period of 2 or 3 years together with weakness. Becoming more and more severe it was only with effort that he was able to carry on his work. Pain was most marked when up and about, that is, when weight bearing, and did not bother him at night. As to his weakness, he did not feel tired but seemed to lack muscular strength. His symptoms finally became so severe that he took to bed on January 1, 1948. He was examined and found to have a spinal curvature and some tenderness of the lumbar muscles. He was treated with salicylates orally, rest on a flat bed, heat and massage locally. After a week or so he was able to return to work only to be disabled again after a few days with the same complaints. He was re-examined and X-rays ordered of the lumbo-dorsal spine and pelvis. Upon these it was seen that the vertebrae showed marked compression deformities and decalcification. In addition very heavy deposits of

calcium were noted in the kidneys. Whereupon, chemical examination of the blood showed a serum calcium of 15.5 mg. % and phosphates of 2 mg. %. The patient was then sent to the University of Virginia with a diagnosis of hyper-parathyroidism.

There, in January, 1948, a meticulous exploration of the neck lasting 4½ hours was done. A large parathyroid adenoma the size of a small pear was removed. The patient's post-operative course was very critical and his N.P.N. at one time rose to 250 mg. He eventually recovered and returned home on February 9, 1948, for convalescence. After being at home about 10 days he began to have muscle cramps in his legs and to lose his appetite. Nothing definite could be found, but hypocalcemia was suspected and he was given calcium intravenously and orally. He improved at once. This was continued for about 10 days, followed by oral calcium alone. He did not complain and was very well for another 10 days. At mid-night on March 22, 1948, he developed without warning a generalized tetanic convulsion. He was immediately given calcium intravenously but before the administration could be completed he had a second convulsion. This was a generalized tonic contracture of all his muscles and was of the most extreme character with carpo-pedal and laryngeal spasms. Muscle contracture was so great that fractures of both hips, the rt. clavicle, and the rt. humerus resulted.

Within about 2 hrs. he received 50 c.c. of calcium gluconate 10% solution intravenously; also an infusion of 1,000 c.c. of three chlorides (K, Na, Ca) in 10% glucose. In addition he was given 5 gr. of sodium luminal and transported to the hospital. During the next few days he received large doses of calcium chloride, oral calcium, parathyroid hormone and Hytakerol. Blood calcium determinations generally were very low, ranging from 4.2 mg. % to 7.2 mg. %. He also received five blood transfusions because of a severe anemia. He gradually improved. Calcium levels were followed by use of the Sulkowitch test on the urine. An N.P.N. was 57 mg. %. After two weeks the patient was allowed to go home on oral calcium lactate 6 teaspoonsful four times daily, Hytakerol 1 c.c. three times daily, and dilute hydrochloric acid 15 drops in water with meals.

After leaving the hospital the patient's convalescence was uneventful. Gradually his medication has been reduced until at present he is on small doses of calcium lactate, and a preparation of crude liver extract with B complex which his wife administers twice weekly hypodermically.

The fractures of the clavicle and humerus sustained during the convulsions were not immobilized any more than to allow the arm to be at rest in as comfortable a position as the patient could find for it. They cause no disability now. The hip fractures were never discovered until 10 months later when he was subject to another X-ray examination because of persistent eversion of the legs and feet and difficulty in walking. Indeed, the patient never voiced much complaint about his legs or hips until he began to try to get about. At present he is able to carry on his usual office work for eight hours daily and to get about fairly well on crutches. Blood examinations in March and June, 1949, showed calcium and phosphate to be normal. The N.P.N. remains elevated at 62 to 67 mg. %.

3417 Memorial Avenue.

The Cost of Doctoring.

The American Medical Association's economics expert, Dr. Frank G. Dickinson, announced in *Time*, August 7, 1950 that the cost of medical care in the United States has not gone up as far or as fast as the cost of living. Using Department of Labor figures, Dr. Dickinson claimed that the cost of medical care (including drugs) for the year 1949 was 45% higher than in the "normal" years of 1935-39, while the cost of living was up 69%.

Included in the overall medical figure were doctors' fees, up 38%; dentists' fees, up 51%; prescriptions, up 37%; and hospital rates, up 127% (but the average stay in hospital was shorter, so that the patient's bill went up only 67%).

XUM

RADIOACTIVE IODINE STUDIES FOLLOWING HEMITHYROIDECTOMY FOR CARCINOMA OF THE THYROID; A POSSIBLE AID IN THE DIAGNOSIS OF EARLY METASTASES— A CASE REPORT

KENNETH R. CRISPELL, M.D.,*
Charlottesville, Virginia.

Radioactive iodine, I^{131}, has now been extensively used for the diagnosis and treatment of thyroid disorders. The treatment of thyroid malignancy with radioactive iodine has been disappointing because of the small percentage of tumors which will take up iodine. The diagnosis of metastatic lesions of the thyroid with this agent will also be limited. However, any agent which offers any chance of early diagnosis should be used. We wish to report our experience with radioactive iodine, following hemithyroidectomy for carcinoma of the thyroid, as an aid in the diagnosis of metastases.

CASE REPORT†

Mrs. G. A., a 32 year old white female, was first seen in the Ochsner Clinic on June 15, 1948. She stated that on April 1, 1949, she first noticed a small mass on the left side of the neck just anterior to the left sternocleidomastoid muscle. At this time she was three weeks post partum. The mass was still present at the sixth week post partum check. A biopsy was advised and this was done on June 9, 1948. The pathological report was adenocarcinoma, metastatic, probably from the thyroid gland. She was referred to our clinic for treatment.

At the time of admission on June 15, 1948, she had no complaints. Past history was essentially negative except for the removal of a fibroadenoma from the left breast in May, 1947.

Physical examination was entirely negative except for a recent surgical wound in the left anterior cervical triangle. The thyroid gland was not palpable and no cervical adenopathy could be palpated.

Laboratory examination revealed the following: RBC 4,38; Hbg. 13.7 gm., WBC 9,150, P.—70, L.—32, M.—5; Urinalysis—negative, Serology—negative, BMR—7, —9, Sedimentation rate 15 mm. per hour (Wintrobe), Cholesterol—309. X-rays of the chest, pelvis, and skull were reported as normal.

The patient was advised to enter the hospital for thyroid surgery. She was admitted to the Ochsner Medical Foundation Hospital on June 21, 1948.

First Hospital Admission June 21, 1948.

On June 22, 1948, the patient underwent a left hemithyroidectomy and left cervical gland dissection. The thyroid isthmus was also removed. The patient withstood the operation very well and was discharged on the fifth post-operative day with instructions to receive deep x-ray therapy from her local physician.

Pathological report was as follows: Gross—A 4 gm. thyroid lobe measuring 4 x 3 x 1.5 cm. presenting at one pole a circumscribed 1 x 1.5 cm. firm, grayish tumor; Microscopic—papillary adenocarcinoma of the thyroid. Note: "The histological appearance of the node previously removed from the neck is identical to that described for the above primary lesion".

Follow Up Examinations—January 18, 1949.

The patient stated that she had x-ray therapy as advised. From July 10 to July 30, 1948, she received 9 x 300 r. to each of two areas over the neck. Each field received a total of 2,700 r. The right neck port measured 7 cm. in diameter, and the left 10 x 10 cm. The ports were treated on alternate days.

On October 25, 1948, a nodule was removed from the left cervical area posterior to the left sternocleidomastoid muscle. The pathological report was metastatic adenocarcinoma. The pathologist stated that "the post irradiation specimen was indistinguishable from that taken before irradiation therapy was begun".

She stated that for the last two months she had felt perfectly well. Physical examination of the neck revealed no evidence of nodularity in any area. She was advised to return in one month for tracer studies with radioactive iodine.

Second Hospital Admission—February 21, 1949.

*Instructor, Department of Internal Medicine, University of Virginia Hospital, Charlottesville, Virginia. Fellow, Commonwealth Fund.

†We wish to express our appreciation to Dr. Champ Lyons of the Ochsner Clinic for referring this patient to us for studies with radioactive iodine.

The patient was admitted to the hospital for tracer studies with radioactive iodine. She had no complaints at this time. A surgical consultant felt that there was a questionable palpable node on the left side of the neck anterior to the left sternocleidomastoid muscle. He felt that this had not been present on the follow up examination on January 18, 1949.

Laboratory examinations including complete blood count, urinalysis, and blood chemistry were all within normal limits except for a sedimentation rate of 40 mm. per hour (Wintrobe).

The patient was given a tracer dose of one hundred (100) microcuries of radioactive iodine, I^{131}, by mouth. Twenty-four hours later the uptake over various areas of the body was determined. All readings were made with a Geiger-Mueller tube enclosed in a lead shield 1.5 cm. in thickness. The shield had a small rectangular window 3 cm. x 0.5 cm. which served as the counting surface. All counts were made with the shield approximating the skin. The results are shown in Table I.

TABLE I

AREA	CTS/MIN
Thyroid Isthmus	2,034
Thyroid—Right Lobe	2,228
Thyroid—Left Lobe	810
Femur—Left	60
Forehead	66
Cervical Spine—7th	306
Thoracic Spine—12th	96

Uptake of I^{131} in CTS/MIN previous to radical neck dissection.

As a result of the questionable node in the neck, the increased sedimentation rate, and the tracer studies, the patient was advised to have an exploration of the left cervical area for possible metastases. Twenty-four hours before surgery the patient was given a repeat tracer dose of one hundred (100) microcuries of radioactive iodine, I^{131}.

A left radical neck dissection was performed by Dr. Champ Lyons with ligation of the internal jugular vein and removal of the carotid sheath and left sternocleidomastoid muscle. A node 2 x 1 x 1 cm. was found deep to the left sternocleidomastoid muscle just above the clavicle. This node was removed for pathological examination and survey for the presence of radioactivity.

The pathological report of the node was as follows: "A well differentiated papillary adenocarcinoma of the thyroid metastatic in a lymph node". The surface radiation from this node was 228 cts/min. A piece of muscle of approximate size removed from the same area had no detectable radiation.

Six days after surgery the patient was given another tracer dose of seventy-five (75) microcuries of radioactive iodine, I^{131}. The general pattern of surface radiation was again obtained by the same technique. The results are shown in Table II.

TABLE II

AREA	CTS/MIN
Thyroid Isthmus	2,988
Thyroid—Right Lobe	3,288
Thyroid—Left Lobe	780
Femur—Left	12
Forehead	12
Cervical Spine	378

Uptake of I^{131} in CTS/MIN after radical neck dissection.

The patient had an uneventful recovery and was discharged on the seventh post-operative day.

DISCUSSION

A review of the literature did not reveal any data on tracer studies carried out in a patient with a previous hemithyroidectomy. The interpretation of the tracer studies previous to surgery was difficult to evaluate. The problem was to decide if the radiation over the left anterior cervical area was due to collection of radioactive iodine in a node or merely to the scatter radiation from the remaining right lobe and isthmus. The area over the seventh cervical spine was chosen as an area equidistant from the right lobe of the thyroid which could be used for comparison with the left anterior cervical area. Previous to the radical neck dissection the counts/minute from the area over the left anterior cervical area was sixty-three (63) per cent greater than that from the area over the seventh cervical spine. After the radical neck dissection this difference was only fifty-two (52) per cent. The node removed from the left anterior cervical area contained radioactive iodine. This would seem to indicate the radiation from the node was contributing to the total radiation in the left cervical area. The greater part of the radiation in this area was coming from the remaining right lobe.

We wish to emphasize that the decision to explore the left cervical area was not determined by the tracer studies alone. As stated in the history there

XUM

was a suggestion of a mass in this area plus an elevated sedimentation rate. Our data indicate the difficulty that will be encountered in trying to evaluate tracer studies for early metastases in those cases where functioning thyroid tissue remains in the neck. Hemithyroidectomy remains the treatment of choice in those carcinomas of the thyroid confined to one lobe. For this reason, radioactive iodine will have a very limited use in the diagnosis of early metastases.

SUMMARY

A patient who had previously undergone a hemithyroidectomy for thyroid carcinoma was given tracer doses of radioactiye iodine, I^{131} in an attempt to diagnose early metastases. The studies presented indicate that some early metastatic lesions of the thyroid will collect radioactive iodine. Those lesions that collect radioactive iodine may possibly be detected by tracer studies.

CONCLUSION

1. Radioactive iodine may be of value in the diagnosis of early metastatic lesions from carcinoma of the thyroid.

Saline Solution in Treatment of Burn Shock.

The Surgery Study Section of the National Institutes of Health has recommended to the Surgeon General, of the Public Health Service that the use of oral saline solutions be adopted as standard procedure in the treatment of shock due to burns and other injuries in the event of large-scale civilian catastrophe, and there is sufficient evidence to suggest its use. After experimental work the Section stated that "Certain factors are important in governing the effectiveness of the oral administration of salt solutions. They are as follows:

"1. The composition of the salt solution: The most palatable salt solution is made by dissolving 3 to 4 grams of sodium chloride and 2 to 3 grams of sodium citrate in each liter of water. If sodium citrate is not available, ordinary baking soda may be substituted for it.

"2. The concentration of salt should not be in excess of 140 milliequivalents of sodium per liter. If the concentration is above this, vomiting and diarrhea became important complicating factors.

"3. Whenever profound peripheral circulatory collapse is present, the intravenous route of administration must be used until peripheral blood flow has been reestablished. The salt solutions that we have found most satisfactory for this purpose are Hartmann's solution (Lactate-Ringer's solution) or plasma. In addition to the salt solution or plasma intravenously, whole blood is given concurrently whenever peripheral circulatory collapse exists. This materially implements the effectiveness of salt solutions.

"The slightly hypotonic salt solution is the only drinking fluid permitted the injured individual until the edema of the injured parts begins to subside. Certain exceptions to this rule have to be made during the hot weather of summer when it is sometimes necessary to permit the partaking of some non-salty water.

"As much as 10 liters of the hypotonic salt solution have been drunk in the 24-hour period by adults who have been severely burned. Since salt solution has been substituted for water, as a drinkable fluid, no burned person who has lived for longer than 3 hours after being admitted to the hospital has suffered from anuria. The 'early toxemia phase' of the burns has also failed to appear and the osmotic concentration of the plasma electrolytes has been well maintained.

"We feel that much more clinical observation and actual experimental work should be undertaken regarding the effectiveness of the basic principles of the supportive therapy of burns."

XUM

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO. B-78391

This 51 year old, married, colored female was admitted to the hospital with the chief complaint of pain in the arms and legs of five days' duration. The patient stated that she had had a "cold" for three or four weeks preceding this episode, with vague pains over the entire body. Five days ago, while in bed for the "cold", the patient began to notice a cramp-like pain in the legs and arms. The pain seemed to be definitely aggravated by moving the feet and legs, and by pressing on the calf or the muscles of the forearms. The pain became so severe in a matter of hours that the patient was unable to walk. There was no history of trauma to the extremities or of ulcers or other open lesions. There had been no joint swelling or joint pains noticed previous to the illness. The patient's past medical history was essentially negative. She had the usual childhood diseases without sequelae. There had been no operations. There was no history of tuberculosis, heart disease, kidney disease or diabetes. The patient's general health had been good. The patient had had two stillbirths and had eight living children. One died at an early age of pneumonia. Her last menstrual period had been approximately two years ago. The patient's family history was non-contributory.

Systems review was essentially negative with the exception of marked anorexia for three days.

Physical examination on admission showed a blood pressure of 160/100, temperature of 102.8° orally, pulse 130, and respiration 20. The patient appeared to be a well developed, obese, colored female lying quietly in bed in no acute distress. She was cooperative and mentally clear. However, some of the answers to questions appeared vague. Examination of the head was normal. The ears were normal. Eyes: There was questionable icteric tint to the sclerae. Fundoscopic demonstrated flat discs. The nose was normal. Teeth were carious, breath was foul, tongue was coated, red and rough, and the lips were dry. The neck appeared obese with no palpable masses, no spasm, and was supple to movement. The chest was symmetrical, respiratory movements equal bilaterally, breasts were pendulous, the lungs were clear to percussion and auscultation. Breath sounds seemed somewhat increased in intensity. Heart rate was 130, rhythm regular. There was no enlargement, no murmurs or thrills noted. Radial pulse was rapid, regular and bilaterally equal. Abdomen appeared obese; there were no masses or viscera felt, no fluid wave, spasm, or tenderness elicited. No herniae were found. Peristalsis seemed distant, percussion note was normal. Pelvic revealed a moderate whitish yellow discharge; the cervix was enlarged, eroded and bleeding. Rectal was normal. The reflexes were physiological. No gross palpable lymphadenopathy. Palpation of the extremities revealed marked tenderness in both calf muscles and muscles of the forearm. Left leg: There was a positive Homan's sign.

Admission urinalysis showed a cloudy, strongly acid urine with a specific gravity of 1.022, 3+ albumin, a trace of sugar, positive for both acetone and diacetic acid. There were 10-20 white blood cells per h.p.f. and a "few" red cells per h.p.f. There were many granular casts and epithelial cells found. Blood count showed a hemoglobin of 10 grams with 33,650 white cells with 89% polys., 1% basophil, 5% lymphs. and 5% monos. On the smear there appeared to be toxic granulation in the polymorphonuclear cells. The patient's serology was negative. The NPN was 69 mgs. %.

The patient was admitted to the Surgical Service and three hours later a bilateral lumbar sympathetic block done at L2, 3, and 4. There was some relief of pain. The feet and legs felt warmer. There was no sweating of feet and legs. On the second hospital day a medical consultant stated that examination showed a very obese patient with no localizing signs of phlebitis. The patient could scarcely move the legs due to pain and had a uremic odor to the breath. Respirations were 28 and appeared "acidotic" in type. The eye grounds could not be seen due to poor condition. There was a tachycardia with poor heart tones and A_2 was greater than P_2. There was a question of cardiac enlargement. The lungs were

XUM

clear to percussion and auscultation. There were no rales or rubs. The abdomen appeared soft, the spleen was not felt and the liver was questionably enlarged. No lymphadenopathy. Joints and extremities were negative except for the description of the pain in the legs. A repeat pelvic examination on the second hospital day revealed a foul-smelling, thick, white discharge from the cervix and vagina. The vulva, vagina and cervix appeared compatible with menopausal changes. The cervix was effaced and bled easily. A biopsy was taken from this area. The uterus and adnexae were not thought to be enlarged. The cervical biopsy report stated: "Mucosa of the cervix is fibrous and infiltrated with lymphocytes and mononuclears. Some of the ducts show squamous metaplasia. No suspicious foci in the four sections prepared." The patient continued to run a temperature between 102 and 103 on the second hospital day. Blood count on this day revealed 30,800 white cells with 88% polys., 12% lymphs. PSP test was done on the second hospital day with a one-hour concentration of 5% and two-hour concentration of 5%. Total of 10% excretion of dye. The Mosenthal test showed a top concentration of 1.015. Due to continued fever and leukocytosis, urinary changes, elevated NPN, and muscle spasm and tenderness, the patient was transferred to Medicine. A chest plate on the second day reported "No pneumonia seen. There were breast shadows at the costophrenic angles and there was prominence of the left ventricle and the innominate artery, with only very slight congestion." A right lateral x-ray and fluoroscopic examination of the chest reported "prominent innominate artery which did not displace the trachea. There was pulsation in it on fluoroscopy and it was seen in both projections. The aorta was arteriosclerotic, and sharply defined in both projections. The left ventricle was enlarged and there was slight pulmonary congestion. In the lateral view there was an oval density 4.5 x 4 cm. back of the heart. This was sharply defined, but not very uniform in appearance. The sharp definition and suggestion of some calcification would favor an old tuberculoma rather than a metastatic or primary nodule. The chest was somewhat emphysematous with large posterior anterior mediastinal spaces, but with not as much enlargement of the heart suggested on lateral as on PA view." Routine agglutinations, on the second hospital day, were negative for typhoid "O," typhoid "H," para "B," K-19, and brucella. A progress note made on the third hospital day noted the blood pressure was 164/105, fundoscopic examination revealed no choking, hemorrhages or exudates seen. There was no nuchal rigidity found and no jaundice. The lungs were clear, the heart was negative except for enlargement to the left and tachycardia. The abdomen was negative, slight tenderness in both costovertebral angles and there was 1+ pretibial edema. There was a positive Homan's sign bilaterally. There were no palpable veins felt in the legs. There was marked tenderness over both calves, and left thigh muscles. On the third hospital day the CO_2 combining power was reported as 46.6 vol.% or 21 mEq. A peripheral blood smear showed a marked leukocytosis with an increase in the neutrophils and monocytes. Platelets were greatly increased. The red cells were normocytic, normochromic with little polychromasia. The sternal marrow smear showed fairly marked hyperplasia of the myeloid cells, fairly marked hypoplasia of the erythroid cells. Megacaryocytes showed marked platelet production. Sodium was reported as 129 mEq and potassium as 4.9 mEq. NPN on the third day was reported as 92 mgm.%. Chlorides were 530 mgm.% or 91 mEq. Serum bilirubin was reported as direct or immediate 2.3 mgm.% and indirect or total as 3 mgm.%. Calcium was reported as 11.2 and phosphates were reported as 7.6 mgm.%. On the fifth hospital day a lumbar puncture was done. The pressure was not recorded. 10 cc. of clear colorless fluid was recovered and sent to the laboratory with the report of spinal protein 20 mgm.%, no cells seen, mastic reported as 2-1-1-0-0. Spinal fluid Wassermann was negative. On the fifth hospital day an icteric index was reported as 9 units, the NPN had risen to 119 mgm.% with a creatinine 7.9 mgm.%. Blood sugar was 150 mgm.% and the chlorides were 648 mgm.% or 101 mEq/liter. Heterophile agglutination was negative. The electrocardiogram was reported within normal limits with the exception of a slight axis deviation and a sinus tachycardia. The patient's treatment from day of admission to this point had consisted of penicillin 100,000 units, q 3 h, I. V. glucose in water and in normal saline supplemented by vitamins. On the sixth hospital day the patient became confused, refused to accept feedings. A stomach tube was inserted, and 3,000 calorie tube feeding diet ordered. The patient developed frequent loose bowel move-

ments and became more confused. On the sixth hospital day blood culture was returned as negative, the NPN had now reached 137 mgm.%, the CO_2 combining power was 40 vol.% or 18 mEq. The patient continued to run a temperature between 101 F. and 102 F. and the patient's blood pressure during her hospital stay from the day of admission until the sixth hospital day seemed to be gradually rising. The highest level that was recorded during this period was 250/135. This gradually returned to 140/100, later to rise to 220/100. The blood count on the eighth hospital day was reported as red count 2,780,000, hemoglobin 7.5 grams, white cells 29,100 with 89% polys., 1% basophils and 10% lymphs. with toxic granulations seen. The patient's clinical course on the eighth hospital day took a decided turn for the worse; her breathing became labored, she began to aspirate mucus and became markedly confused. There was a uremic frost noted on the face. Bilirubin on this day was reported as direct 0.8 mgm.%, total 1.2 mgm.%, icteric index 11 units, sodium 130 mEq/liter, potassium 7.2 mEq/liter, CO_2 combining power 32.4 vol.% or 14.5 mEq, chlorides 578 mgm.% or 99 mEq/liter. Three blood cultures were reported as negative on that day. Treatment consisted of intravenous fluids, tube feedings and penicillin, 100,000 units every 3 hours. On the eighth hospital day aureomycin, 250 mgm. every three hours was started via nasal tube and streptomycin, grams ½ four times a day started. During the eighth hospital night the patient was markedly restless, struggling, and frost seemed to be increasing. At 3:15 A. M. on the ninth day the patient ceased to breathe.

DISCUSSION BY DR. RENO PORTER.*

I might say to start that I think this is a very excellently prepared protocol. It has all of the essential facts I think we need to make a presumptive diagnosis.

It is a very long protocol so I won't bother to read all of it but will just mention the salient features. We have a 51 year old, colored, married woman, who stated that she had had a cold for about three or four weeks prior to admission and, for the past five days had been having rather severe cramp-like pains in her legs and forearms. She also had some anorexia. The rest of the history is more or less non-contributory.

*Associate Professor of Medicine, Medical College of Virginia, Richmond.

On physical examination we find a well-developed, colored, obese female with a temperature of 102 F. and a pulse of 130. The essential features on physical examination were a slight icterus, a moderate whitish yellow discharge from the cervix, and definite calf muscle and forearm muscle tenderness. She also has a positive Homan's sign. From what I can gather, this is about all that was found when this patient came in to the hospital.

From the protocol history it is implied that bilateral thrombophlebitis was suspected. Homan's sign, of course, is supposedly a pathognomonic sign of thrombophlebitis. However, it must be realized that any type of calf muscle disease, such as a myositis would give a positive Homan's sign since it is a matter of contracting diseased muscles, and this would give pain just as well as having an inflamed venous channel.

The laboratory gives us important data: The urine's specific gravity was 1.022, which on routine examination is a good concentration. Albumin was 3+, a trace of sugar, and positives for both acetone and diacetic acid. Acetone and diacetic acid, generally speaking, may be due to faulty catabolic metabolism such as occurs in diabetes, which may be suspected in this case because of glycosuria, and it may also occur in any type of disease that involves loss of protein or loss of tissue, or even simple starvation.

There were 10-20 white blood cells per H.P.F. and a few red cells per H.P.F.; there were also many granular casts. She had a moderate anemia with a hemoglobin of 10 grams and a marked polymorphonuclear leukocytosis. There is no mention here of any other cells we are particularly interested in, namely eosinophils, but apparently there was no eosinophilia. The cells on smear show toxic degeneration. She has an NPN of 69 mgm.%.

As I have said, on admission she was apparently suspected of having thrombophlebitis for which she had a bilateral lumbar sympathetic block. This resulted in warm extremities and absence of sweating, so we assume it was a good procedure; in other words, a satisfactory procedure—they did an actual sympathetic block. The patient stated she had some improvement in her pain, but apparently it was very transient because the next day she was seen by a medical consultant because of rather severe pain.

Additional findings at that time showed the pa-

XUM

tient was suspected of having cardiac enlargement, also a uremic odor to her breath, and supposedly acidotic breathing. The remainder of the findings of that special consultant were essentially as before.

She continued to run a temperature of 102-103° F. as well as a continued marked leukocytosis, the polymorphonuclear cells being 88%. The PSP showed diminished renal function. It is interesting to note that the Mosenthal test, which is supposedly a test of renal concentration, showed only a concentration of 1.015. Now that is a disconcerting thing we find very frequently, that routine urinalyses have higher specific gravities than those obtained by Mosenthal when we theoretically have the patient under stress of dehydration; certainly other evidences here indicate that the patient had impaired renal function, and perhaps the initial high level was due to other substances in the urine, such as albumin and certain other elements which might raise the concentration or the renal lesion may have progressed in the meantime.

She was transferred to the Medical Service. A chest x-ray was taken and reported as showing some left ventricular enlargement and a sharply-defined arteriosclerotic aorta.

It is noted that her blood pressure was somewhat elevated on admission, and it has continued to rise. It was 164/105 at this particular point in her clinical course. Fundoscopic examination, rather important, revealed no choking, hemorrhages or exudates. No nuchal rigidity was found. There was slight tenderness in both costovertebral angles and a 1+ pretibial edema. There continued to be positive Homan's sign, but no veins were palpable. She continued to have tenderness over both calves and left thigh muscles. The CO_2 combining power was essentially normal at this time. The platelets were greatly increased and the red cells were thought to be normocytic, normochromic, with a little polychromasis.

The rest of the studies are not of particular importance, I believe—at least they don't contribute much to my interpretation of the case, except for the slight degree of icterus with serum bilirubin of 2.3 indirect and a total of 3 mgm., which is somewhat elevated. Lumbar puncture was done which showed nothing of significance. NPN continued to rise, now 119 mgm.%, blood sugar 150—again this brings us to a possibility of some disturbance like diabetes, or maybe some result of a general derangement of the entire body that is probably going on.

Her hospital course, more or less continued downhill with a rising NPN, rising blood pressure, an increase of polymorphonuclear cells but no particular increase in the jaundice. She died on the 9th hospital day.

That, in summary, is the information we get from the protocol of this 51-year old female patient who comes in complaining of muscle pains, shows a phenomena of renal failure, and dies rather promptly within two weeks after the onset of her more acute symptoms, and within a month after the onset of any complaint at all, which, to me, is a very rapid progress of her disease. It seems obvious that this patient had some form of renal disease. We recognize it by the urinary findings, by the impaired function as manifested by PSP and later by Mosenthal test; and finally, by a rising NPN, uremia and death.

We also have this disturbance in the muscles that is emphasized so in the history. She had marked pain, cramp-like pains in her muscles, particularly her extremities, and they were markedly tender. Nothing further is said regarding the state of the skin and subcutaneous tissues, so I am accepting it as that; in other words, there was no edema particularly except later on, which is pretibial; there was no skin rash of any kind; there was no brawny thickening of the muscles themselves as we frequently see in certain conditions—they were simply tender, painful muscles.

Now the problem is, does this all tie up together —or do we have two separate diseases: I believe we should try to tie things together on one etiological basis. We should, therefore, consider what single pathological entities could best explain all these findings. In the first place, I certainly think that we must think of malignant hypertension in any patient who has a rapidly progressing renal failure plus some evidence of heart disease. Certainly this renal picture is consistent with this diagnosis, especially the rapidly failing kidney and a rapid downhill clinical course. However, we don't get the muscle disturbance that is seen here, and certainly I think that the fundoscopic examination rules out malignant hypertension.

When we are faced with the symptom of painful muscles, we must consider the so-called "Diseases of

Collogen." This is a group of disorders showing more or less similar reaction of collogen tissue but of unknown etiology and with different clinical picture. One of these is dermatomyositis, a condition involving the small arterials of the body, but manifested by actual dermititis and markedly painful sore muscles. There are many things here that don't fit in with dermatomyositis, chief of which is the absence of characteristic skin lesions. In addition, dermatomyositis doesn't ordinarily result in any renal damage so far as I know. Therefore, I think we can exclude this as the single etiological factor.

Scleroderma, which is closely related to dermatomyositis, is suggested by the muscular lesions, but I think is a even more remote possibility than dermatomyositis.

Another of this group of diseases to consider is that of lupus erythematosis. This again is another disease of small blood vessels which can involve most of the organs of the body, but ordinarily is characterized by a typical skin eruption, although it may be absent in some cases. It is more prone to occur among women which fits in here, but its most striking characteristic that rules it out, as far as this patient is concerned, is the absence of a leukopenia. In this patient we have a marked leukocytosis. In addition, in the typical picture of lupus, there is more of an arthritis than a myositis which this patient had.

And now we come to one condition this group of disorders which I think is the most probable explanation of this patient's findings. That is periarteritis nodosa. It is a general systemic disease with multiple manifestations secondary to widespread arterial involvement throughout the body. It could certainly produce the muscle pain and tenderness which this patient had. It could, also, give the high fever, as well as the leukocytosis. Some cases have been reported with leukocytosis 45,000. We know that it can produce widespread disease in many organs. Involvement of the liver may result in jaundice. The pancreas may be involved, resulting in a diabetic picture. There usually is involvement of the kidney, such as this patient had, with renal failure, azotemia and death. Lesions present in the heart and lungs together with the hypertension can give us cardiac enlargement and failure. So that, to me, periarteritis nodosa presents a very probable picture here. Certainly it could account for all the symptoms and signs which this patient presented.

I am a little disturbed, however, by the rapid downhill course that this patient had. From what I understand about periarteritis nodosa, it is a condition which only lasts several months—there are some cases that have recovered from so-called pseudo-periarteritis nodosa but ordinarily we don't see patients die within a little over a month from this disease. That to me is not too much against it because everything else fits pretty well. We often see some eosinophilia when we have periarteritis nodosa but as you know that necessarily does not have to be present. In one series, only 19 cases out of 101 had any degree of eosinophilia; so, actually, it is not a common finding.

Now, I think we should consider some other things because there certainly are other possibilities. When we get to infectious processes, assuming that these others are not infectious, although they may be, in anyone with painful sore muscles we think we have to think of trichiniasis, and certainly the picture this patient presents, as far as the muscles are concerned and the overwhelming condition she had and her death, could be explained on the basis of overwhelming infection of trichiniasis. I am not acquainted, however, with renal lesions in trichiniasis, so as the cause for the total picture, I must exclude it.

We might briefly mention the rickettsial diseases, because they are characterized by widespread arterial disease which this case represents, but again, because there was no rash, I shall exclude these.

I think we ought to consider Weil's Disease. It has many of the characteristics which this patient presented; a rapidly fulminating condition which can involve various organs, particularly the kidney and the liver. It is associated with a high fever, a very toxic reaction, and they can die in a rather short time, such as this patient did. I think Weil's Disease must be given serious consideration. However, this case does not quite fit it because ordinarily there is marked jaundice with Weil's Disease. In many cases of Weil's Disease there is no jaundiced stage, but these cases ordinarily recover. I think most of them who have died had a marked degree of jaundice, which apparently this patient did not have.

There is no record on the protocol as to a complement fixation test. In diagnosing Weil's Disease we are dependent upon either recovering the organism or the complement fixation test. In the first week we can recover the organisms from the blood and in

XUM

the second week we can recover them from the urine. The complement fixation test is ordinarily not positive until the tenth day or later. However, according to most authorities, you can't be sure that Weil's Disease is ruled out until the test remains negative for 30 days. I think it is an unlikely diagnosis but it is my second choice.

There are probably a few other conditions we should think about, such as lead poisoning. This condition can give rise to a neuritis, and sometimes findings quite similar to a myositis, as well as the renal damage which this patient had. I think it is a very remote possibility.

Finally, I think we ought to consider the question of a thrombophlebitis, because, after all, that was the initial hospital impression. Certainly this wasn't ordinary thrombophlebitis. The condition we speak of is thrombophlebitis migrans, which can involve many vessels all over the body and can produce considerable pain and tenderness. In this condition, however, only the superficial veins are involved, and they are readily seen and noted. We get the impression in this case that nothing was noted about the veins being abnormal and no veins were palpable. I think, therefore, we can rule out phlebitis of any kind here as an isolated phenomena.

Those are about all the conditions I know of that can give rise to all of the varied manifestations this patient had. As I intimated in my discussion, my first choice will be periarteritis nodosa. It can explain all of the manifestations this patient showed. My only hesitation is the rapidity of the course. My second choice would be Weil's Disease; the rapid course is more like Weil's Disease, but we have very few of the manifestations we would anticipate. Of course, we don't know exactly what went on here—we might find that the patient had chronic glomerulonephritis, as one condition, and something else causing this peculiar difficulty with the muscles, and that could be trichiniasis, or maybe dermatomyositis, or some such situation as that. I cannot exclude the possibility that we are dealing with two situations; however, I'll stick to periarteritis nodosa.

Hospital diagnosis: Weil's Disease.
Dr. Porter's diagnosis: Periarteritis nodosa.

PATHOLOGICAL REPORT: DR. E. E. PAULTER*.

The body was an obese colored female with a protuberant abdomen and a 3 cm. decubitus ulcer over the left buttock. A slight icteric tinge was noted in the 6 cm. of subcutaneous fat.

Grossly the heart weighed 480 Gm. and revealed dilatation of the right side with moderate hypertrophy of the left. There was minimal atherosclerosis of the coronary arteries with slight fibrosis of the mitral and aortic valves. The aorta also showed moderate sclerotic changes. A small adenoma was located in the right upper pole of the thyroid and all four parathyroid glands had adenomatous hyperplasia. The lungs showed patchy atelectasis, edema, emphysema and early focal pneumonia. The liver was enlarged, weighing 2,350 Gm. The kidneys were enlarged, firm and pale. The right weighed 400 Gm. while the left was 450 Gm. The upper portions of both ureters were slightly dilated. The uterus contained multiple small leiomyomata while the cervix revealed a chronic cystic cervicitis.

Histologically the most significant findings were in the vessels of the liver, periadrenal fat, renal pelvis and small intestine. The walls of the small arteries and arterioles were necrotic, edematous and infiltrated by polymorphonuclear leukocytes, lymphocytes, plasma cells, and macrophages. This same process extended out into the surrounding tissue. Some vessels contained small thrombi. The infection tended to be focal in some vessels while in others it was located more extensively perivascularly. The changes are consistent with an acute necrotizing polyarteritis.

In the kidney the glomeruli were slightly enlarged and cellular due to slight polymorphonuclear leukocytic infiltration and edema. It is an acute glomerulitis or acute exudative glomerulonephritis (and is not to be confused with the usual acute proliferative type). The interstitial spaces contained lymphocytes, plasma cells and a few eosinophilic and polymorphonuclear leukocytes along with some edema. The tubules have finely granular pink pigment casts in the lumen and show cloudy swelling, degeneration and desquamation of the epithelium. These findings are consistent with a lower nephron nephrosis.

The liver parenchyma revealed only cloudy swelling and no lesions suggestive of Weil's Disease were seen. Special strains for spirochetes were negative.

*Assistant in Pathology, Medical College of Virginia, Richmond.

The death is attributed to uremia.

Pathological diagnoses:

1. Acute polyarteritis (acute necrotizing arteries and arteriolitis—so-called periarteritis) of liver, periadrenal fat, duodenum and renal pelvis.

2. Lower nephron nephrosis and acute glomerulitis (acute exudative glomerulonephritis).

3. Dilatation and hyperthrophy of myocardium.

4. Arteriosclerotic valvular disease, aortic and mitral, minimal.

5. Atherosclerosis:

A. Aorta, moderate.

B. Coronary arteries, minimal.

6. Atelectasis, edema, emphysema and early focal pneumonia, pulmonary, bilateral.

7. Thyroid adenoma, right upper pole.

8. Hydroureter, bilateral, minimal.

9. Leiomyomata, uterus.

10. Adenomatous hyperplasia, parathyroid glands (x4).

11. Decubitus ulcer, skin, left buttock.

Comment:

The diffuse vascular lesions along with the renal picture suggests some sensitizing agent as the cause but the etiologic factor is not determined in the autopsy findings.

New Books.

Below are listed some of the newer books in the Tompkins-McCaw Library of the Medical College of Virginia, which are available to our readers under usual library rules:

Alexander, F.—Psychosomatic medicine.

Bacon, Harry E.—Anus, rectum, sigmoid colon: diagnosis and treatment. 3rd edition.

Burch & Winsor—A primer of electrocardiography. 2nd edition.

Cooper, Barber & Mitchell—Nutrition in health and disease. 11th edition.

Curtis & Huffman—Textbook of gynecology. 6th edition.

Eastman-Williams' obstetrics. 10th edition.

Frey-Wyssling — Submicroscopic morphology of protoplasm and its derivatives.

Gesell, *et al.*—Vision: its development in infant and child.

Harrison, T. R.—Principles of internal medicine.

Ivy, Grossman & Bachrach—Peptic ulcer.

Kanner—Child psychiatry. 2nd edition.

Kuhn—Eyes and industry. 2nd edition.

Los Alamos Sc. Lab.—The effects of atomic weapons.

Matheson, Robert—Medical entomology. 2nd edition.

Nelson, editor—Mitchell-Nelson's textbook of pediatrics. 5th edition.

Palyi—Compulsory medical care and the welfare state.

Pattee—Pattee's dietetics. 23rd edition.

Prather, G.—Urologic aspects of spinal cord injuries.

Rankin & Graham—Cancer of the colon and rectum. 2nd edition.

Recent progress in hormone research. Vol. 5, 1950.

Rubenstein—A treatise on contemporary religious jurisprudence.

Shapiro & Weiner—Coagulation, thrombosis and dicumarol.

Slaughter, Frank G.—Medicine for moderns.

Tidy, Noel M.—Massage and remedial exercise in medical and surgical conditions. 8th edition.

Willis, R. A.—Pathology of tumors.

Wood & Boag—Researches on the radiotherapy of oral cancer.

XUM

MEDICAL SOCIETY OF VIRGINIA

MESSAGE TO MEMBERS

Your A.M.A. Dues and Your Delegates to A.M.A.

It is with some concern that members of the Medical Society of Virginia are again approached regarding membership in the American Medical Association for 1950.

As of October 1, only 35% of the membership were credited with having paid their dues in the amount of $25 for A.M.A. It is believed that there exists some misunderstanding, since last year, when dues were not required, approximately 70% voluntarily contributed.

1950 is the first year in the history of the A.M.A. that dues have been required. Virginia's showing has certainly been less than impressive, and is far below the median for the nation. At least three states boast of having over 90% of their members paid up.

Representation in the House of Delegates of A.M.A. is based on paid-up membership in A.M.A., one for each thousand members, or fraction thereof. If Virginia has no more than one thousand members by December 31, her representation in the A.M.A. House of Delegates will be reduced from *three* to *one*.

Briefly, the situation is this: 1950 dues for A.M.A. membership are due immediately, and should be paid without delay to your local medical society, which in turn should forward the payment to the Medical Society of Virginia. After proper credit is recorded here, the payment will be sent to A.M.A. Those who became members of their local medical societies after July 1, need pay but $12.50.

* * * * * * * *

Dr. Ernest B. Howard, Assistant Secretary of A.M.A., states that "Fellowship depends on membership, and will be forfeited if membership is forfeited." Present indications are that Fellowship dues in 1951 will be reduced to $5. Fellowship dues are paid directly to A.M.A., and separate receipts for same are sent directly to individual physicians by A.M.A.

It seems that Membership dues in A.M.A. for 1951 will remain the same ($25). However, the A.M.A. Journal will be sent free to members. Separate receipts for membership dues will be sent directly to individual physicians by A.M.A.

C. L. HARRELL, M.D.

Floral Eponym

Altamirano, Fernanco

ALTAMIRANOA

Dr. Fernando Altamirano was at one time director of the Institute Medico Nacional of the City of Mexico. He wrote a Mexican materia medica, a Manual of Mexican Herbs, St. Louis, Mo. 1904.

Altamiranoa are Sedum-like perennials. Twelve specimens are known of which five have been grown in Washington greenhouses and the New York Botanical Garden.

PUBLIC HEALTH

L. J. ROPER, M.D.

State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for October 1950 as compared with the same month in 1949, and for the period of January through October 1950 as compared with the same period in 1949 is as follows:

	Oct. 1950	Oct. 1949	Jan.-Oct. 1950	Jan.-Oct. 1949
Typhoid and paratyphoid	11	26	79	130
Diarrhea and dysentery	211	530	3,460	5,431
Measles	65	28	2,605	21,304
Scarlet fever	82	75	726	589
Diphtheria	23	32	155	138
Poliomyelitis	188	58	1,068	305
Meningitis	4	0	98	73
Brucellosis	5	6	53	62
Rocky Mountain spotted fever	10	4	74	101
Tularemia	1	0	34	28

THE PHYSICIAN AS NUTRITIONIST

Since the public looks to the physician for advice in staying well as in getting well, the physician needs to keep aware of the nutritional needs of his patients.

The three protective foods most often lacking in sufficient quantities in winter menus are milk, fruits and vegetables. This may be due either to insufficient income, ignorance, indifference or bad food habits. The Foods and Nutrition Board of the National Research Council has set up recommended allowances for various food nutrients for different age groups. Using this as a guide, surveys of food intake and food distribution have indicated that the diets of a high percentage of people do not meet these recommendations. Many people do not know what constitutes a good diet while others are not convinced that food makes any difference.

Every day is a growing day for a child, and good food, regularity and simplicity are essential. A child should be given the best opportunity for growth and good health by beginning the day with a *good breakfast*. Education should begin in earliest childhood in order to establish good eating habits, and should be continued intensively and persistently without interruption.

The high consumption of concentrated sweets and other foods of high carbohydrate value may be the reason that more essential foods are crowded out at meal time. In this connection should be kept in mind the theory of the frustrated person who may eat himself into obesity.

The practice of omitting breakfast or eating a breakfast of poor quality, such as coffee and a sweet roll, has serious implications when one considers the newer concepts of nutrition, such as that of protein supplementation.

There is an optimum diet for good health. A good school lunch is a very important tool for the improvement of child health, but the school lunch provides only one-third of the child's daily food requirements —the remaining two-thirds must be provided at home.

It is the responsibility of parents, with the help of their physician, to assist children in developing healthy attitudes toward food. By themselves following proper eating practices, parents can materially help children in establishing good eating habits.

XUM

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

Emotional Problems of Children*

Psychiatric knowledge has made it plain that people show their emotional difficulties indirectly rather than directly. This statement is true of adults. It is even more clearly evident in the case of children. They have greater need of indirect expressions of their emotional troubles than do grown-ups, because they have less facility in expressing them verbally. In general, there are two common methods of emotional expression in children. One is through changes in the bodily economy. The various types of disorders and complaints dealt with in psychosomatic medicine are essentially emotional expressions. The other means of expression is in overt behavior. The various behavior problems of children are, like the psychosomatic disorders, ways in which the youngsters express their feelings. Unfortunately, these feelings are usually not understood as such by the parents.

The factors which cause emotional difficulties in children are many and varied. By and large, they stem from the frustration of children's needs. Frustration of one's needs is, of course, an essential part of human life. Each of us has to learn how to curb his own desires so that he can be a social being. Children must be taught this, and in so doing they are subjected to a great deal of frustration. We may well ask how one can avoid creating problems in children if frustration is, thus, inevitable as a part of growth. The answer is to be found in the fact that the tolerance of the child for frustration of his needs and desires is something that grows and develops with life. If the child is subjected to frustration in too severe a form or at too early an age, so that he is unable to tolerate the deprivation, deep emotional problems result.

It would be well to call attention at this time more especially to those needs which suffer frustration most frequently. First of all, we must note that a child needs love. This is normally received from the parents. We would be making a severe error if we were to suppose that the giving of love by the parents is a universal phenomenon. Such is not the case. There is in our American culture a very high ideal of parental love. This sometimes blinds us to the fact that the mere physical act of being a parent does not necessarily mean that the father or mother loves the child. Those of us who are doing clinical work with problem children see very many cases in which there is rejection of the children by the parents rather than any true love of them. Moreover, one must recognize that the rejecting parent is himself or herself faced with a conflict between his or her own feelings and demands that society puts upon him or her to be a good parent. Relatively few fathers and mothers can face the fact of rejection. Most of them conceal it from themselves by blaming it upon the child's behavior or else by indulging in some type of compensation, usually overprotective attitude. Parental overprotection can be understood as compensatory behavior upon the part of the parent, compensating either for deep rejection of the child or for some lack in the parent's own life.

The growing child feels a need to accomplish something. Often circumstances are such that the child is not able to do anything well. This may be due to causes inherent in the child himself, such as actual physical or mental inferiorities. More frequently, it is due to attitudes of the people around the child, who fail to provide him with any situations in which he may do something successfully.

This discussion of parental attitudes should not in any sense blind us to the fact that there are many other influences in the child's life which may cause frustration. The parents are seen as most important simply because they form the most prominent part of the child's environment during the very impressionable and formative early years of life. The rivalries which occur between brothers and sisters play a very considerable part in shaping emotional drives. As the child becomes older, his response to and treatment by his companions plays an increasingly important role in his life. A little later, the child goes to school. There he has to meet competition with other children, good and bad attitudes of teachers,

*Abstract of article published in the August 1950 issue of the *Wisconsin Medical Journal*, by Gilbert J. Rich, M.D., Psychiatrist-Director, Roanoke, Virginia, Guidance Center.

etc. All of these are likely to produce frustrations and to give rise to emotional difficulties.

It is possible at this time to mention only a few of the commoner behavior problems which are brought to the attention of physicians. Probably one of the most frequent is a refusal of the child to eat. When the child refuses to eat, he is accomplishing something that is of value to him. He gets the parent to urge him to eat and he thereby makes the parent show this symbol of his love. Of course, the refusal of food may mean other things, such as a means of gaining attention from the parents or a weapon to use against them. In any event, the value of not eating to the child is always a result of the parental attitude toward it. It is worth while for the child to refuse food only if the parent is thereby incited to some form of action, whether it be urging, anger, punishment, etc.

It must follow from this that treatment of the situation lies primarily in removing the taking of food (or the failure to do so) from the sphere of emotional expression. Inasmuch as the parents, by their response, have made the refusal useful to the child as a means of expressing his feelings, it must follow that this value of food can be eliminated if the parents will cease to be concerned as to whether the child eats or does not. Naturally, the physician may be faced with the problem of balancing the physical and the emotional needs of the child. He will have to ask himself whether the harm done by allowing the child to go without food, even to the extent of not eating at all for a few days, is greater or less than the good done by treating the behavior and abolishing it as a source of friction within the home. It is only the rare case in which the physical factors are so important that the parent cannot be advised to ignore whether the child eats or does not eat.

Another common behavior problem of children is the existence of temper tantrums. A temper tantrum has very much the same function in the child's emotional life as does refusal to eat. It is a means by which he or she can accomplish something that he wants, even if that something is no more than attaining the attention which the parent has to give when he spanks or otherwise punishes the child. In this connection, it should be noted that there is no justification for assuming that punishment always deters or that a child will always behave so as to avoid being punished. On the contrary, we see in child guidance clinics many children who actively seek punishment either as a vicarious solution for feelings of guilt or because they wish the attention of their elders to so great an extent that they would rather be punished than ignored. The cure of temper tantrums is as simple as that of refusal to eat. The significance of the temper tantrum is given to it by the parental reaction and when the parents stop responding the child is no longer able to accomplish what he desires. Occasionally, of course, we see a child who has temper tantrums because of excessive irritability which is on an organic basis. These cases are particularly marked by the impulsive nature of the child's outbursts, which often occur without any adequate reason. In such cases (and they are relatively rare), it might be well to look for a history of some illness which might have had encephalitic components and to either confirm or rule out their existence by means of an electroencephalographic tracing.

A much more difficult problem to deal with than any of the above is enuresis. One reason for this is that it is so closely interwoven with one of the major early frustrations of a child, that of toilet training. No doubt, we often fail to recognize the extent to which we are frustrating an infant when we cause him to give up the freedom of eliminating waste products when and as he pleases and require him to fit into the pattern which our culture sets. Toilet training illustrates the previously emphasized point that a child cannot safely be frustrated until he has developed to the point where he can tolerate that frustration. It would appear that the second year of life, that is, between the ages of 1 and 2, is the optimum time for developing daytime habits of elimination and that the third year of life is the optimum time for extending these habits throughout the night. Many children are trained before the age of 2 to be dry both day and night without any harm, but there would hardly seem to be any justification for calling the child enuretic because it wets the bed at the age of 2. It is only after the third birthday is past that it can be considered a serious problem. In addition, we must realize that bed-wetting, because it brings forth a reaction from the parents, can serve the child in the same ways as do temper tantrums or refusal to eat.

The handling of the enuretic child presents many difficulties. Certainly, the first thing to do is to mini-

XUM

mize the tensions within the home situation. This involves having the parents cease all shaming, punishments, and threats connected with enuresis. A second step is to arouse in the child not merely an interest in being dry, but a feeling of success. This can be accomplished by a regular program of awakening the child at night, arranging the time or times of awakening so that the child will be successful in keeping a dry bed. We wish to build self-confidence. It is my feeling that the time-honored treatment of eliminating the intake of fluid after 4 o'clock in the afternoon is at best only a weak supplement to other forms of treatment. It is very seldom that it effects a cure by itself.

The few problems mentioned here are merely examples of how children use their behavior to express themselves and to find outlets for their emotional problems. The situations involved are usually quite complicated, both because the child is subjected to a myriad of factors influencing his feelings and behavior and because he has many ways of self-expression. We should emphasize the importance of thinking of a child's behavior not in terms of what it means to the grown-ups in his environment, but rather in terms of the child's own needs and the ways he is using to satisfy them.

BOOK ANNOUNCEMENTS

Pars Pro Toto. Brevarium Medicum Internationale (Abbreviations in International Medical Literature Including Sister Sciences. By ALFRED PEYSER. Stockholm. Almqvist & Wiksell. 1950. 196 pages. Cloth.

The Physician Examines the Bible. By C. RAIMER SMITH, B.S., M.D., D.N.B. Philosophical Library, New York. 1950. vii-394 pages. Cloth. Price $4.75.

Sexual Fear. By EDWIN W. HIRSCH, B.S., M.D., Attending Urologist, Englewood Hospital, Chicago, Ill.; former Associate in Urology, College of Medicine, University of Illinois. Garden City Publishing Company, Inc., Garden City, N. Y. 1950. ix-307 pages. Cloth. Price $3.00.

Principles and Practice of Surgery. By JACOB K. BERMAN, A.B., M.D., F.A.C.S., Indianapolis, Indiana. Associate Professor of Surgery, Indiana University School of Medicine; Associate Professor of Oral Surgery, School of Dentistry; Chief Consultant in Surgery, Billing's VA Hospital, Ft. Benjamin Harrison; etc. St. Louis, The C. V. Mosby Company. 1950. XVI-1378 pages. With 429 Illustrations. Cloth. Price $15.00.

Principles of General Psychopathology. An Interpretation of the Theoretical Foundations of Psychopathological Concepts. By SIEGFRIED FISCHER, M.D., Clinical Instructor in Psychiatry, University of California. Philosophical Library, New York. 1950. xxi-327 pages. Cloth. Price $4.75.

Physical Examination in Health and Disease. By RUDOLPH H. KAMPMEIER, A.B., M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine; Chief of the Medical Outpatient Service, Vanderbilt University, Nashville, Tennessee. Philadelphia, F. A. Davis Company, 1950. xx-821 pages. With 550 Illustrations, 1 in Color. Cloth. Price $8.00.

Teaching the Retarded Child at Home. School at Home. Teaching the Handicapped Child Through Practical and Proven Methods. By EDNA DAVISON OSTERHOUT, B.A., Teacher of Handicapped Children at the Brett School, Dingman's Ferry, Pa. Duke University Press, Durham, N. C. 1950. x-67 pages. Paper.

Breast Deformities and Their Repair. By JACQUES W. MALINIAC, M.D., Clinical Professor of Plastic Reparative Surgery and Associate Attending Plastic Surgeon, New York Polyclinic Medical School and Hospital; Attending Plastic Surgeon, Sydenham Hospital, New York. Grune & Stratton, New York. 1950. ix-193 pages. Illustrated. Cloth. Price $10.00.

The author states on the wrapper that "the purpose of the book is to show the surgeon, gynecologist, and obstetrician, interested in mammaplastic surgery but without special experience in the field, which are the safe procedures available for correction of breast deformities, and to help him determine the proper method for each individual case." A careful reading of this book by the casual operator would probably serve to deter rather than encourage a venture into this field of surgery for the pitfalls are many and disappointments are inevitable.

A very good description of the blood supply to the breast is given. A knowledge of this is essential in any plastic procedure on the part, for most operations that come to grief do so as the result of postoperative circulatory deficiencies.

A remarkable number of different technics have been devised to correct hypertrophy of the breast. No less than 28 methods are described, all designed to offset nature's derelictions in this respect. The author describes in detail and makes out a good case for his own two-stage procedure.

The final chapters which are devoted to anomalies, gynecomastia, etc., are of considerable value. The book is well written and the photographs are uniformly good. The illustrations are abundant, which probably explains in part the considerable cost of this rather thin volume. H. J. W.

Sir William Osler. Aphorisms from His Bedside Teachings and Writings. Collected by ROBERT BENNETT BEAN, M.D. (1874-1944). Edited by William Bennett Bean, M.D. Henry Schuman, Inc., New York, 1950. 159 pages. Cloth. Price $2.50.

Sir William Osler died in 1919. His statue is still increasing. Last year, the 100th anniversary of his birth, was noticed by practically every medical magazine in this country and Great Britain. Some devoted a whole issue to commemorating his work. This attractive little collection of his aphorisms is therefore timely. They were collected by the late Dr. Robert Bennett Bean, who was professor of anatomy at the University of Virginia, and a former student of Sir William's. The aphorisms are classified according to subject matter under six headings; the medical student, the ethos, the patient, the great republic of medicine, epitomes, and epitaph. Every student of medicine would do well to keep this little volume at his bedside so as to absorb its wisdom. No. 107 is a good sample. "From the day you begin practice never under any circumstances listen to a tale told to the detriment of a brother practitioner. And when any dispute or trouble does arise, go frankly, ere sunset, and talk the matter over, in which way you may gain a brother and a friend."

M. P. R.

The Merck Manual of Diagnosis and Therapy. A Source of Ready Reference for the Physician. Eighth Edition. Merck & Company, Inc., Rahway, N. J. 1950. 1592 pages. Cloth. Price—Regular Edition, $4.50; Thumb-Index Edition, $5.00.

The seventh edition was published in 1940 so that a new edition of this well-known manual is welcome. Diseases are now arranged according to systems rather than the alphabetical individual listings in the previous edition. Prescriptions are in English replacing Latin ones and are grouped in categories. A list of proprietary compounds alternative to those mentioned in the text is useful. It is doubtful that there is a better small book for a quick survey of standard therapeutic procedures.

M. E. B. O., JR.

Psychiatric Sections in General Hospitals. By PAUL HAUN, M.D., MED. SC. D., Assistant Professor of Psychiatry, Georgetown University Medical School. An Architectural Record Book. F. W. Dodge Corporation, New York. 1950. 80 pages. Cloth. Price $4.00.

In an introduction to this monograph, Dr. Karl Menninger states, "It is no longer possible to shut our eyes to the fact that most of the people who need hospital care are not properly provided for in the type of hospital and hospital service which now exist." Taking this fact as a keynote, Dr. Paul Haun has endeavored to point out the existing lack of proper facilities, as well as give the necessary points and plans to be considered in the proper establishment and functioning of psychiatric sections in general hospitals. It is not the purpose of this review to abstract the book which Dr. Haun has so excellently written; it is sufficient to state that he has considered the patients' needs and problems in every aspect. The use of unobtrusive security features, proper interview and examination rooms, solarium, and nurses' stations are discussed in detail.

One point illustrated by Dr. Haun is the importance of a psychiatric section in a general hospital. He expresses the view that there is much less stigma attached to psychiatric hospitalization when it is obtained in a general hospital. He also feels that the prompt availability of internists and surgeons is a factor strongly in favor of this type of psychiatric unit.

Also included in the book are eight floor plans with ratings as to their operability. Six more floor plans are presented as proposed by Charles Butler and Addison Erdman.

While it is felt that the plans included with the grading "A" are good and workable plans, attention must be called to the fact that no mention is made of the four wing, "cross" type with central lobby. This has been found to be a most satisfactory type of floor plan, mainly because of the workability of isolating the more disturbed patients, while still maintaining them under the prompt supervision of the general psychiatric nursing staff.

R. F. G., JR.

XUM

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President.....Mrs. C. M. McCoy, Norfolk
President-Elect.....Mrs. Herman W. Farber, Petersburg
Recording Sec'y..Mrs. E. Benjamin Sheppard, Richmond
Corresponding Sec'y.....Mrs. Lemuel Mayo, Portsmouth
Treasurer.....Mrs. Kalford W. Howard, Porstmouth

Presidents of Component Auxiliaries

1. Alexandria—Mrs. F. Preston Titus, 128 Moncure Drive, Alexandria
2. Arlington—Mrs. R. H. Detwiler, 5027 N. 30th Street, Arlington
3. Danville-Pittsylvania — Mrs. Charles Easley, 111 Hawthrone Drive, Danville
4. Lynchburg—Mrs. Powell G. Dillard, 218 Woodland Ave., Lynchburg
5. Norfolk—Mrs. William P. Sellers, Jr., 111 Oak Grove Road, Norfolk
6. Northampton-Accomac—Mrs. W. T. Green, Jr., Nassawadox
7. Northern Neck—Mrs. Motley Booker, Lottsburg
8. Petersburg—Mrs. Julius Hopkins, 1814 Brandon Ave., Petersburg
9. Richmond—Mrs. F. L. Finch, 105 Seneca Rd., Richmond
10. Warwick—Mrs. Louis J. Richman, 310—65th St., Newport News
11. Smyth—Mrs. C. C. Hatfield, North Holston

The Auxiliary Pledge

I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation, and ever sustain its high ideals.

The White House Conference, December 3-7, in Washington

The Auxiliary to the American Medical Association will be represented at the mid-century White House Conference. This is the fifth of its kind. The first was held in 1909 and resulted in the creation of the Children's Bureau. The second, held in 1919, led to the passage of the Child Labor Law. The third, in 1930, produced the now famous "Children's Charter", and the 1940 conference, although handicapped by the war, nevertheless resulted in the establishment of several state and community services for children.

Dr. D. A. Dukelow of the A.M.A. Bureau of Health Education has been assigned to the staff of experts to help design permanent programs for improving the mental and physical health of children.

In addition to the A.M.A., hundreds of professional, voluntary and official organizations, with memberships that cross-section the entire population, are working on the conference. They are examining the environment in which children are growing up, studying ways in which it can be improved, and later will make recommendations for action programs in which both children and adults can participate.

Keep the Public Informed

All over our State, Auxiliary members have demonstrated their ability to get the facts before the public, to awaken public interest, and to stimulate discussion of proposed medical legislation which would affect the health and welfare of every American. As we work together this year to further our Public Relations Program, please let's have an exchange of ideas by sending your plans to Mrs. J. W. Carney for publication here.

"Whether we shall continue to live in a free America or a Socialistic America may depend more upon individual efforts than we realize. We must stand united behind American Medicine and all that it represents. Our responsibilities to each other and to the American people are now greater than ever before."

Mrs. David Allman

The President's Message

We began our 28th year of Auxiliary work together with a great feeling of pride in what we have been able to accomplish. The scope of our work has widened in many directions. The work which we carry on through our chairmen should be expanded wherever feasible. We must never forget the influence which we as physicians' wives weild in our community for greater understanding among our profession as well as the public at large. May we continue to carry out the ideals of the founders of our organization.

We must never be satisfied with our accomplish-

ments; if we do, then we shall cease to grow and to be of service.

Please know that I am always open to your suggestions and you may be assured that they will be most happily received and deeply considered.

May God bless each one of you as we go forward this year together.

MARY ANN MCCOY

CHICAGO CONFERENCE

Virginia was represented at the Chicago Conference, held November 2-3, by Mrs. Herman W. Farber and Mrs. C. M. McCoy.

The theme of the meeting was "Public Service Through Education". Dr. Cline, president-elect of the A.M.A., spoke to us and said we may win in the next two years but he warned us to beware of complacency or inertia. We, auxiliary, really do the work and carry the ball for the doctors.

Mrs. David Allman, as chairman of arrangements for the annual meeting, June 11-15, at Atlantic City, gave her plans for our sessions.

We were told that "we, who are so well prepared to educate the public in the ways of health, must take the lead, because if we don't others will. Let us be charged with the zeal to carry on, realizing that we are the right arm of the A.M.A."

Mrs. Leo J. Schaefer, National organization chairman, said there were 90,000 doctors' wives not members of the auxiliary. At present, we have 53,592 members. There are 2,005 medical societies and 1,037 auxiliaries. We were urged to make every doctor's wife an auxiliary member with many suggestions given us as to how to accomplish this.

All but four states had representation at this meeting. The exchange of ideas was most helpful.

The program was carried out in the form of four panels with the president of each state assigned to one of these. The panels were organization, public relations, program and "Today's Health". Virginia's topic was "Today's Health in the Physician's Office".

Auxiliary Reports.

WARWICK

At the first Fall meeting on September the 27th, with luncheon at Hotel Warwick in Newport News, Mrs. Chester Bradley, a past president, installed officers for the coming year. Mrs. Louis Richman, president; Mrs. William A. Read, vice-president, both for a second term. Others taking office were: Mrs. J. W. Carney, treasurer; Mrs. O. Watts Booth, recording secretary; and Mrs. Charles Gandek, historian.

Committee chairmen are as follows: Ways and Means, Mrs. William A. Read; Membership, Mrs. Herbert Neisser; Legislative, Mrs. Thomas N. Hunnicutt; Nurse Recruitment and Lucille Hunnicutt Jones Award, Mrs. Murray A. Dick and Mrs. Thomas Lawford; Rolling Library, Mrs. Guy Amory; Program, Mrs. I. Floyd Nesbitt; Publicity, Mrs. Vincent E. Lascara; Today's Health, Mrs. Melvin L. Horne; Cancer Control, Mrs. Russell Buxton and Mrs. Barnes Gillespie; Bulletin, Mrs. Bradley; and Community Health Council, Mrs. Lawford.

Plans were discussed for the Bazaar to be given in December at Riverside Hospital.

On September 12th, the Auxiliary was hostess at their annual party honoring to incoming classes of student nurses at Riverside and Buxton Hospitals. The entertainment was in the form of an outing and a picnic at Mariner's Museum and approximately seventy-nine attended.

JOSEPHINE L. LASCARA
(MRS. V. L.)

DANVILLE-PITTSYLVANIA

The proposed plans for the coming year's work and various committee reports were highlights of the business luncheon meeting held October the 19th at the Country Club. The new president, Mrs. John L. Clare presided. The following slate of officers will assist her in the year's work: President-elect, Mrs. Henry Bourne; vice-president, Mrs. C. A. Easley; recording secretary, Mrs. H. J. Langston; corresponding secretary, Mrs. D. L. Arey; treasurer, Mrs. Prentice Kinser.

Chairmen of the principal committees include Mrs. M. H. McClintic for Ways and Means; Mrs. L. O. Crumpler, program; Mrs. W. E. Dickerson, social; Mrs. F. H. McGovern, parliamentarian; Mrs. J. L. Eggleston, philanthropic.

A summary of the recent State Medical convention in Roanoke was given by the delegates, Mrs. Easley and Mrs. Langston.

SARAH W. PRITCHETT
(MRS. DRAKE)
Publicity Chairman

XUM

EDITORIAL

Wade Hampton Frost (1880-1938)

REED, Ross and Gorgas practiced epidemiology, but as a discipline epidemiology did not exist at the time. It was not taught in any university. The man who put epidemiology in the curriculum of Hygiene and Public Health Schools was Wade Hampton Frost.

Frost was born in Marshall, Virginia, March 3, 1880, the seventh of eight children. His father was a physician who moved to Virginia from Charleston, South Carolina, just after the Civil War. His mother, Sabra J. (Walker) Frost, was a cultured and gifted woman who had great influence in his early education. He was raised in a cultured, as well as a medical, atmosphere. His grandfather, his father and an older brother, had studied medicine. According to "Who was Who" his more formal education was received at Randolph-Macon College (1896-97) and at the University of Virginia where he received his A.B. degree in 1901 and his M.D. in 1903. At Randolph-Macon he joined the K. A. fraternity and Phi Beta Kappa. Like so many of the graduates in medicine at the University of Virginia at the time, he went to Bellevue in New York for his clinical training. He also served a year as interne at St. Vincent's Hospital in Norfolk. Again, following the traditional course of so many Virginia graduates, he tried out the examinations for a Federal appointment. He accepted a commission in the Public Health and Marine Hospital Service, and in February 1905, was assigned to duty at the Marine Hospital in Baltimore.

The turning point in his career came in 1908 when he was assigned to duty at the Hygienic Laboratory, then under the direction of M. J. Rosenau. Here he came in contact with a group of enthusiastic Public Health investigators: John F. Anderson, Joseph Goldberger, L. L. Lumsden, J. H. Kastle, C. H. Lavinder, Edward Francis and Reid Hunt. Here he mastered the technic of Public Health Laboratory procedures, especially those used in investigation of stream pollution. He was assigned to routine examination of Potomac River water in relation to the typhoid problem in Washington. In 1913 Congress created the authority and provided the funds for a study of stream pollution and water purification. A laboratory and administration office was set up in Cincinnati. Frost was put in charge of the project. He had a large staff of physicians, engineers, chemists, a microbiologist and a bacteriologist working on the problem. It was Frost's responsibility to organize and correlate these studies. This work was interrupted by our entry into World War I. Frost was then detailed to the American Red Cross to organize the Bureau of Sanitary Service. In a short time he developed tuberculosis necessitating a stay of six months in a sanatorium in North Carolina and another six months of light duty. Upon his return to active duty he was assigned to a statistical and epidemiological study of influenza in collaboration with Edgar Sydenstricker, from whom he learned much about statistical methods. Frost was now a well rounded epidemiologist.

In 1919, when the Johns Hopkins School of Hygiene and Public Health was established, Dr. Welch, its first Director, appointed Wade Frost Resident Lecturer in Epidemiology and in 1921 he became Professor. He was Dean of the Faculty in the School of Hygiene and Public Health, 1931-34, succeeding Dr. William H. Howell.

Besides being a pathfinder in teaching epidemiology, Frost is remembered for his work on water supplies and the epidemiology of influenza, poliomyelitis and tuber-

culosis. He was noted for the accuracy and clarity of his writing and the charm of his personality.

This is the 18th of a series "Doctors for whom the public should be thankful."

The Roanoke Meeting

ROANOKE doctors are wonderful hosts and the Medical Society of Virginia loves to meet in their hospitable city. In the past our meetings there have always been successful and the meeting this year was no exception. Six hundred and eighteen doctors, 186 ladies and 123 exhibitors registered. Five hundred and seventy-four attended the banquet. All available space was taken up with scientific and commercial exhibits and they attracted a lot of attention. They were certainly attractive.

Among the scientific exhibits the first prize was awarded to Dr. John Devine and his group in Lynchburg, for their exhibit on carcinoma of the stomach and pancreas. The second prize went to Dr. William R. Sandusky of the University of Virginia for his work on antibodies in experimental gas gangrene. Dr. Lee Sutton of the Medical College of Virginia was given the third prize for his work on poliomyelitis. We were interested to note that the mortality at the Medical College of Virginia Hospitals was 0.84 per cent in the present epidemic as contrasted with 8.7 per cent for the State as a whole. While there is no specific cure for poliomyelitis, these figures show that much can be done to save life by good medical and nursing care. The scientific papers were well presented and well discussed. One essayist was sick and could not come to the meeting; all others on the program were present. So much for the statistics of the meeting.

In other respects, this was no ordinary meeting. The House of Delegates had its hands full. It discussed (1) the draft, (2) compulsory health insurance, (3) the A.M.A. dues, (4) Negro membership and (5) civilian defense. There was a general feeling that the present situation was not just a temporary emergency, but one that would likely last for years and to meet it successfully would require long range planning.

There is still a great deal of confusion about the draft of doctors, dentists, veterinarians, opticians and osteopaths. The recent graduates in medicine, we were told, all want the draft. They have not volunteered because many have families. An added complication is that many are under contracts as residents in hospitals. The draft is the simplest way out for them. Most of the doctors discussing the question looked on service with the armed forces as an obligation to be gotten over with as quickly as possible. Concern for the good of the fighting man seemingly did not enter into the question. For instance, many doctors advocated that service in the line before a man had studied medicine should count as much in the way of priorities and length of enlistments as service in the Medical Corps.

Virginia is near the bottom of the States in the payment of the A. M. A. dues. To date only 35 per cent of the members of the Medical Society of Virginia have paid up. In some States, notably, California and Pennsylvania, over 90 per cent have paid. It is not believed that this reflects any lack of loyalty to the A. M. A. on the part of Virginia doctors but is largely due to the confusion that has existed as to the method of collection. Last year the payment of twenty-five dollars was a voluntary matter and 67 per cent paid the assessment. This year it is obligatory and membership in the A. M. A.

XUM

is contingent upon the payment of the twenty-five dollar dues. Since our representation in the House of Delegates of the A. M. A. is based upon the number of our members, unless there is a great improvement in the matter of A. M. A. dues our representation will most certainly be reduced. The local component Societies should collect this money and send it on to the State Society office without further delay.

The elimination of the word "white" from the constitution so that Negro physicians who are acceptable to component local Societies can become members of the Medical Society of Virginia and in turn, the American Medical Association, was extensively discussed. Unfortunately, the issue was somewhat confused by the fact that the Committee to confer with the Old Dominion Medical Society did not publish the proposed change in the MONTHLY but sent out a written notice to the membership. When the question came to a final vote it lacked five votes of having the required two-thirds majority.

The problem of civilian defense was discussed by Col. William L. Wilson, Special Assistant to the Surgeon General. The key to the successful solution is cooperation. There must be careful planning to insure quick flow of personnel and material from nearby areas in case of disaster. The Medical Society has a strong Committee to head up this new activity.

At the public session on Monday evening compulsory health insurance was fully discussed. Dr. Caudill delivered the best presidential address we have heard. He showed why socialized medicine has not worked elsewhere and why it cannot be expected to work for the benefit of either the public or the profession. Senator Byrd, the guest speaker of the evening, was so impressed with Dr. Caudill's speech that he is going to have it published in the Congressional Record. Senator Byrd was in rare form. America is great, he said, because of the American way of doing things. This is true for medicine as well as industry. This country cannot carry the world on its shoulders and socialism on its back and survive.

At the banquet on Tuesday evening, Mr. Sokolsky reinforced what Dr. W. C. Caudill and Senator Byrd had said against President Truman's health program, approaching it from a third angle, that of a news commentator. His theme was the Asiatic situation, and the need of America to keep strong. He said the Korean crisis had its beginning at Cairo in 1943 when Roosevelt and Churchill promised Chiang Kai-shek and Mme. Chiang Kai-shek to restore to the original owners all the land that the Japanese had taken. Four days later, the same two at Teheran promised the same land to Russia. Mr. Sokolsky gave a good picture of the Russian mind. They hold to Marxist principles and work for its spread over the world with the enthusiasm of religious fanatics. They recognize that the United States is the only obstacle between them and their goal. Whether they win victories or not is immaterial, so long as they wear down this country's will to resist. They can take their time, twenty-five years if necessary, to weaken this country by boring from within and by external wars. That is why it is so important to stop *now* the present drift towards socialism in this country.

We were particularly fortunate in our guest speakers. Besides Senator Byrd, Col. Wilson and Mr. Sokolsky, there were Dr. Franklin D. Murphy of Kansas City and Dr. George T. Pack of New York City.

Dr. Murphy spoke on Post-graduate Education of the Practicing Physician, a field in which he has made for himself an international reputation. He visualizes the life of the doctor as forty years of continuing education and in Kansas he has implemented such a plan with refresher and post-graduate courses for Kansas doctors. Some of these post-graduate courses provide what he calls "laying-on-of-hands" type of instruc-

tion. We were interested in hearing him say that internships in small general hospitals were of more value to the prospective general practitioner than an internship in a teaching hospital.

The morning of the last day was devoted to a symposium on Progress in Medicine. Dr. Pack discussed Cancer of the colon and rectum, Dr. William Parson, ACTH and Cortisone and the Treatment of Various Diseases, and Dr. Russell L. Haden, the Treatment of Arthritis. These speakers and their subjects evidently appealed to our membership for the attendance was excellent to the very end.

The World Medical Editors Association

THE first meeting of the World Medical Editors was held October 21st at the Roosevelt Hotel, New York, following the Fourth General Assembly of the World Medical Association. There was an excellent attendance, especially from Cuba, Central and South America and one editor came from Cape Town. Dr. Morris Fishbein presided. Many problems of medical editors were discussed. Dr. Hugh Clegg, editor of the *British Medical Journal*, discussed the question of whether book reviews and editorials or leading articles, as the British call them, should be signed. He presented arguments on both sides of the question. Personally, he favored the signed article. Mr. Walter Kahoe of Lippincott's, on the other hand, favored the anonymous article. He said that a good book review was one that gave the prospective buyer an accurate idea of what was in the book. That there was a "typographical error on page 72" was unimportant.

Dr. M. W. Woerdeman, Editor-in-Chief of *Excerpta Medica*, could not be present so his paper on abstracting was presented in brief by Dr. Fishbein, and was discussed by Dr. George Kosmak. Dr. Clegg, who is chairman of a committee of UNESCO that is studying this problem, said that his committee is attempting to have adopted uniform abbreviations for names of medical journals and also common medical terms.

Stanley Weld, of the *Connecticut State Medical Journal*, gave an excellent history of the development of advertising in medical magazines. In this connection, Austin Smith gave an account of the Council on Therapy and Drugs of the A. M. A. He said that the purpose of the National Pure Food and Drug Act was to protect the self-medicator against being poisoned, whereas the Council was concerned not only with the safety, but also with the efficiency of the remedy.

Dr. Garland, editor of the *New England Journal of Medicine*, spoke on the significance of editorial policy. He divided editorials into two classes, medical and others. The editors of State Medical Journals have an important function, and anything that is interesting to doctors is a proper subject for an editorial. Dr. McDermott, of the *Canadian Medical Association Journal*, brought up the subject of indexing editorials. Dr. Fishbein said that it was the policy of the *Cumulative Index Medicus* to index outstanding editorials, but it had difficulty indexing them for the title so frequently failed to indicate what the editorial was about.

At the luncheon, Dr. Larky read an excellent paper on the practical problems of indexing and abstracting. He took as a base line the paper that John Shaw Billings read at the International Congress in London in 1880, when Billings was just starting the *Index Medicus* and the *Index Catalogue of the Surgeon- General's Library*. At that time the problem was enormous but now the number of journals has increased so tremendously that it would be practically impossible were it not for mechanical aids. These have been greatly improved recently, and it is hoped that indexing can be kept current.

The next meeting of the Association will probably be held in Stockholm.

XUM

The Cockroach Role in Food Poisoning

THE common cockroach has long been looked on with suspicion as a carrier of pathogenic organisms, especially those of the intestinal group. They seem by nature ideally suited for this purpose. Their flat bodies enable them to gain entrance to almost any kind of food container. Their insatiable appetites cause them to overeat and, when over distended, they readily regurgitate their food. Thus they may contaminate food by vomitus, feces, and body contact.

Workers in the School of Public Health of the University of Minnesota (Theodore A. Olson and Myrtle E. Rueger, Experimental transmission of Salmonella oranienburg through cockroaches, *Public Health Reports* 65:531, 1950) have carried an elaborate experiment to determine if cockroaches can carry infectious bacteria in their intestinal tract. They used four varieties of cockroaches, and the Salmonella oranienburg as the test organism. The problem is not so simple as it sounds. It took them five years to learn how to raise the cockroaches in the laboratory and the best means of anesthetizing them and of tying them up to prevent them from contaminating their wings and legs. If the body of a cockroach becomes contaminated, the organism remained viable for 78 days in ordinary atmospheric conditions. They were able to prove that after an infected feeding the fecal pellet contained the organism for 10 to 20 days, and even after the organism disappeared from the feces they could be demonstrated in the intestinal tract. The Salmonella oranienburg will survive in such excrement for 199 days at a relative humidity of 31 per cent and 85 days at 52-56 per cent. It can survive on glass surfaces for 34 days, on corn flakes at least 62 days, and on crackers at least 88 days.

The authors point out, however, "That until the actual incidence of infection in wild cockroaches is determined on the basis of a large number of specimens and for a large number of geographical areas, and until this information is integrated with definite epidemiological evidence, the roach can be regarded only with grave suspicion." In spite of lack of such evidence, we had rather see a tramp in our kitchen than a cockroach.

PRESIDENT'S MESSAGE

Have you paid your A. M. A. dues for 1950? If not, send in your check for $25 immediately to the Treasurer of your local Society or to Mr. Henry S. Johnson, secretary-treasurer of the State Society, and mark on the check: A. M. A. dues for 1950. This should be done so it will not be confused with assessments for 1949. If the dues are not paid by December 31, 1950, you will be dropped as a member of the American Medical Association; this is the rule which was passed last year and there is nothing that the State Society can do about it.

We have 2,205 members, which entitles us to three delegates to the A. M. A. meeting in June, 1951; these delegates were elected at our recent meeting in Roanoke. If we do not have over 2,000 members paid up by the thirty-first of December, 1950, we stand to lose one, if not two delegates.

It will be quite embarrassing for our delegates to go to the A. M. A. meeting and find they have been unseated. PLEASE ATTEND TO THIS TODAY!

Organized medicine, through the channels of the A. M. A., has done, and is doing, a wonderful job through the publication of its many journals in helping to develop scientific medicine throughout the entire world. It is also putting up a brisk fight against socialized medicine. These cannot be continued without sufficient funds.

C. L. HARRELL, M.D.

SOCIETY PROCEEDINGS

Warwick County Medical Society.

Dr. Joseph L. Hollander, chief of the Arthritis Section at the University of Pennsylvania, was guest speaker at the regular meeting of this society on the evening of October the 24th at the James River Country Club. His subject was "The Present Status of ACTH and Cortisone", on which he gave a most instructive talk. At the business session, Dr. J. W. Massey, Jr., and Dr. J. W. Choate were elected to membership.

Dr. George S. Grier and Dr. J. W. Carney, both of Newport News, are president and secretary, respectively of the society.

The Roanoke Academy of Medicine

Held its November meeting on the 6th at Hotel Roanoke, under the presidency of Dr. E. G. Gill. Dr. S. F. Driver is secretary.

The scientific program included:

Case Report of Ovarian Cyst—Dr. Walter Johnson

Leukemia in Children—Dr. Paul Forth

Influence of Glucose Metabolism on Stomach Function—Dr. William Poe

Surgical Treatment of Hypertension—Dr. William Tice

A buffet dinner followed the scientific session.

The Northern Neck Medical Society

Held its regular Fall meeting at Kilmarnock, at which time the following officers were elected for the coming year: President, Dr. Lee S. Liggan, Irvington; vice-president, Dr. Richard T. Arnest, Warsaw; and secretary-treasurer, Dr. Paul C. Pearson (re-elected), Warsaw.

NEWS

Committee of Arrangements

For the 1951 annual meeting of the Medical Society of Virginia at Virginia Beach have been named as follows:

General Chairman	DR. WALTER P. ADAMS
Assistant General Chairman	DR. IRA L. HANCOCK
Hotels and Halls	DR. H. FLOYD DORMIRE DR. JAMES W. TODD
Technical Exhibits	DR. GEORGE A. DUNCAN
Scientific Exhibits	DR. EUGENE L. LOWENBERG
Entertainment	DR. SOUTHGATE LEIGH, JR.
Golf	DR. C. M. MCCOY
Publicity and Press	DR. ALBERT V. CROSBY

Special Virginia Society Meetings.

VIRGINIA STATE SECTION OF THE AMERICAN COLLEGE OF PHYSICIANS

The Section held a Luncheon-Business meeting in Roanoke, Tuesday, October 10, during the three days meeting of the Medical Society of Virginia, from October the 8th to the 11th.

The annual election of Officers for the Section was held at this time and Dr. C. D. Nofsinger of Roanoke was elected Chairman and Dr. James F. Waddill, of Norfolk, was reelected Secretary-Treasurer.

It was decided that the Winter Scientific meeting would be held in Roanoke in 1951 at some time during the latter part of February. General information concerning this meeting will be sent out at a later date by the local Program Committee

VIRGINIA ACADEMY OF GENERAL PRACTICE

The Academy held its annual meeting at the time of the State meeting, and the following officers were elected for the ensuing year: President, Dr. Ira L. Hancock, Creeds; president-elect, Dr. John O. Boyd, Jr., Roanoke; vice-president, Dr. Floyd Hobbs, Alexandria; secretary, Dr. Edward E. Haddock, Richmond; treasurer, Dr. C. R. Titus, Bedford. The following constitute the Board of Directors: Drs. N. D. Nelms of Hampton, W. D. Ozlin of South Hill and Harold Miller of Woodstock through 1951; Drs. J. C. Coulter of Charlottesville, B. A. Hopkins of Stuart, and H. W. Rogers of Norfolk through 1952; and Drs. Rufus Brittain of Tazewell, John Davis of Lynchburg; and W. R. Morton of Richmond through 1953, with Dr. J. D. Hagood of Clover ex-officio.

THE CLINICAL SOCIETY OF THE VIRGINIA DIABETES ASSOCIATION

The second meeting of this Society was held in Roanoke on October 8th at 3:00 p.m., at which time

XUM

papers were presented by Dr. William A. Read of Newport News, Dr. Edward D. Levy of Norfolk, Dr. Robert Crawford of Roanoke, Dr. Richard Neubauer of Richmond, and Dr. Ernest G. Scott of Lynchburg. The increase in members indicated a growing interest in the Society and its work.

Officers elected for the ensuing year are: President, Dr. Walter P. Adams, Norfolk; vice-presidents, Drs. Snowden C. Hall, Jr., Danville, and Collins D. Nofsinger, Roanoke; and secretary-treasurer, Dr. Robert L. Bailey (re-elected), Richmond.

The Society has been granted affiliate status with the American Diabetes Association. During the coming year the members will take part in Diabetes Detection work.

VIRGINIA OBSTETRICAL AND GYNECOLOGICAL SOCIETY

This Society held its fall meeting October 10, at the Hotel Patrick Henry, Roanoke. Guest speaker was Dr. F. Sidney Dunne, Philadelphia, Pennsylvania, on "Carcinoma of the Endometrium". Thirty-one members and three guests were present. New officers elected were: Dr. John M. Nokes, Charlottesville, President; Dr. Henry C. Spalding, Richmond, President-Elect; Dr. Chester D. Bradley, Newport News, Secretary-Treasurer.

The following physicians were elected to membership in the society: Dr. John L. Clare, Danville; Dr. William H. Cox, Richmond; Dr. William L. Davis, Newport News; Dr. Alfred R. Garrett, Norfolk; Dr. John F. Gayle, Hampton; Dr. William H. Rogers, Suffolk.

VIRGINIA ORTHOPEDIC SOCIETY

The new officers of this Society elected at its meeting in Roanoke in October are: President, Dr. Charles Frankel, Charlottesville; vice-president, Dr. C. E. Keefer, Lynchburg; and secretary-treasurer, Dr. Allen M. Ferry (re-elected), Arlington. Dr. Ham Allen of the University of Virginia was elected to full membership. The members held a discussion of cerebro-spastic palsy problem in State of Virginia and polio respirator center.

VIRGINIA PEDIATRIC SOCIETY

At the meeting of this Society in Roanoke, Dr. E. Berkeley Neal of Roanoke was named president for the ensuing year; Dr. E. L. Kendig, Jr., Richmond, vice-president; and Dr. W. A. Mitchell, Newport News, secretary-treasurer. New members of the Executive Board are Dr. F. Read Hopkins of Lynchburg and Dr. J. O. Rydeen of Norfolk.

Dr. W. Vernon Lippard, dean of the University of Virginia Medical School, was elected to honorary membership.

VIRGINIA UROLOGICAL SOCIETY

At the annual election of officers of this Society on October the 11th in Roanoke, the following were elected: President, Dr. Robert C. Bunts, Richmond; vice-president, Dr. Roy Upchurch, Danville; and Dr. Warren W. Koontz, Lynchburg, was re-elected secretary-treasurer.

A committee has been appointed to bring about a union of the Virginia and West Virginia Urological Societies and the American Urological Association will be petitioned to make this a branch of the Mid-Atlantic Section.

VIRGINIA SOCIETY OF ANESTHESIOLOGISTS

On October the 10th, Dr. C. R. Stephen, associate professor of Anesthesiology at Duke University Medical School, Durham, N. C., addressed the luncheon meeting at Hotel Roanoke, on the subject "Clinical Applications of the Oximeter in Anesthesia". Dr. Thomas Walker of Richmond is president and Dr. Harold F. Chase, Charlottesville, secretary of this Society.

Charles R. Robins Memorial Lecture.

On November the 10, the second of these lectures was held at the Baruch Auditorium of the Medical College of Virginia. Dr. Conrad G. Collins, professor of gynecology and obstetrics at Tulane University Medical School was the speaker, his subject being "Ligation of the Inferior Vena Cava".

The Charles R. Robins lectureship was established last year by Dr. Spotswood Robins and Dr. Charles R. Robins, Jr., in honor of their father, Dr. Charles R. Robins, one of the founders of Stuart Circle Hospital, this city, and a nationally known gynecologist.

Jefferson Medical College.

The Board of Trustees have accepted with regret the resignation of Dr. Wm. Harvey Perkins as Dean of that college, due to the condition of his health. He will, however, continue his position on the faculty as professor of Preventive Medicine and head of the Department.

Dr. George Allen Bennett, professor of Anatomy

and Director of the Daniel Baugh Institute of Anatomy has been appointed as Dr. Perkins' successor.

State Health Department News.

Dr. John P. Ruppe assumed his duties as Health Officer of the Alleghany-Botetourt Health District effective October 30.

Dr. W. D. Anderson, Health Officer of the Russell-Wise Health District, died on October 25.

Dr. Cooper Honored.

Dr. George Cooper, Jr., Charlottesville, was the recipient this year of the J. Shelton Horsley award of the Virginia Division, American Cancer Society, as the Virginian who had made the outstanding contribution during the year to the control of cancer. Dr. Cooper is now medical and scientific advisor of the Virginia Division and is also a trustee of the National society.

The First Annual Clinical Conference

Of the Gill Memorial Eye, Ear and Throat Hospital for former residents was held at the hospital in Roanoke, September 18.

The following doctors presented papers:

Dr. W. J. Judy, East Rainelle, W. Va.—"Refraction"

Dr. R. M. Ferrell, Lewisburg, W. Va.—"Management of Crossed Eyes"

Dr. F. Buerk Zimmerman, Louisville, Ky.—"Technique for Removing an Eye"

Dr. R. E. Smith, Mount Airy, N. C.—"Case Report"

Dr. Keith Gerchow, Morgantown, W. Va.—"Case Report"

Surgical demonstrations were given by the Staff of the Hospital.

The following officers were elected for the year: President, Dr. F. Buerk Zimmerman, Louisville; Vice-Presidents, Dr. Keith Gerchow, Morgantown, W. Va., and Dr. R. M. Ferrell, Lewisburg, W. Va.; Secretary-Treasurer, Dr. Houston L. Bell, Roanoke.

The next meeting will be held the last week in September, 1951.

Dr. Fred J. Wampler,

Formerly of Richmond and Luray, who for a little more than two years has been in Lima, Peru with the Institute of Inter-American Affairs, has been transferred to Paraguay as Chief of the Health and Sanitation Mission. He is at Asuncion, Paraguay.

A Correction.

Dr. Robert H. Sease, co-author of a paper on "Bromide Intoxication" published in the August *Monthly*, writes us under date of October 17 as follows:

'In a paper entitled "Bromide Intoxication", published by me in the August 1950 issue of the *Virginia Medical Monthly*, the statement was made that "Goody's Headache Powders contained Bromides.

"It has been brought to my attention that this was not true at the time of the publication.

"I would appreciate if you would permit me to correct this error by publishing the enclosed statement."

"ROBERT H. SEASE, M.D."

American College of Surgeons.

At the annual meeting of the Governors and Fellows of the College in Boston October 26, the following officers were elected for the term 1951-1952: President-elect, Dr. Alton Ochsner, New Orleans; vice-presidents, Dr. Thomas H. Lanman, Boston, and Dr. Joel W. Baker, Seattle. These officers will be installed at the 1951 Clinical Congress in San Francisco.

Dr. Alfred P. Jones of Roanoke was among those elected to the Board of Governors for a three-year term expiring in 1953.

At the convocation, 978 initiates were received into fellowship and five honorary fellowships were conferred. Virginia doctors included in the initiates are:

Dr. Lloyd B. Burk, Jr., Arlington
Dr. Monford D. Custer, Jr., Winchester
Dr. John Ferguson Gayle, Hampton
Dr. Kurt Kirsch, Franklin
Dr. Juan de D. Martinez-G, Charlottesville
Dr. Joseph Corbin Parker, Richmond
Dr. Hugo Anthony Sacchet, Clifton Forge
Dr. Claude P. Sherman, Martinsville
Dr. James L. Thomson, Norfolk
Dr. William Rush Whitman, Jr., Roanoke

It has been announced that the Sectional meeting of the College in which is included Virginia will be held February 26 and 27 at Hot Springs, Virginia.

News from the University of Virginia Department of Medicine.

Dr. Edwin Boyle has been awarded a postdoctoral fellowship by the National Institute of Health for

XUM

studies on the ultracentrifugal analysis of the blood in patients with atherosclerosis under the direction of Dr. William Parson, Professor of Medicine, and Dr. Jesse Beams, Professor of Physics.

Dr. Walter O. Klingman, Associate Professor of Neurology and Psychiatry, has been appointed a member of the Board of Chief Consultants to the Medical Director of the Veterans Administration, representing the field of Neurology.

Two series of twelve weekly lectures for students and faculty have been arranged for the current academic year. Guest lecturers participating in the fall series are: Dr. Allen O. Whipple, Clinical Director of the Memorial Hospital; Col. John R. Wood, Chairman, Medical Research and Development Board, U. S. Army; Dr. DeWitt Stetten, Jr., Chief, Division of Nutrition and Physiology, The Public Health Research Institute of New York; Dr. Hudson Hoagland, Executive Director, The Worcester Foundation for Experimental Biology; Dr. Earl T. Engle, Professor of Anatomy, Columbia University; Dr. C. P. Rhoads, Director, Memorial Hospital and Sloan-Kettering Institute for Cancer Research; Dr. W. C. Hueper, Cancer Control Branch, U. S. Public Health Service; Dr. Shields Warren, Director, Division of Biology and Medicine, U. S. Atomic Energy Commission; Dr. Chester Jones, Attending Physician, Massachusetts General Hospital; Dr. Joseph E. Moore, Associate Professor of Medicine, The Johns Hopkins School of Medicine; Dr. John H. Gibbon, Jr., Director of Surgical Research, The Jefferson Medical College.

Dr. Palmer's lecture, "The Rationale of Current Therapy for Esseential Hypertension", is the first annual Staige D. Blackford Memorial Lecture, established in memory of the late Dr. Blackford by his friends and colleagues. Other lectures in the series are financed by the University, Alpha Omega Alpha and Phi Beta Pi.

Dr. Joseph F. A. McManus, Associate Professor of Pathology, has been awarded a grant by the National Institute of Health for histochemical studies on inflammation and repair.

The Children's Service Center, established in 1948 as a child guidance clinic under the direction of Dr. Frank J. Curran, associate professor of neurology and psychiatry, has moved from the University Hospital to larger quarters in the neighborhood. The Center has a staff of ten and is providing a useful service to the community as well as in the instruction of medical students.

Dr. Vernon W. Lippard, dean, and Dr. Henry B. Mulholland, assistant dean of the Department of Medicine, attended the meetings of the Association of American Medical Colleges at Lake Placid, N. Y. on October 23-25. Dr. Lippard was chairman of a panel discussion on faculty recruitment problems and spoke at a symposium on medical education in Europe. He was also reelected a member of the Executive Council of the Association.

Dr. William Parson, professor of medicine, attended the meeting of the Chicago Medical Society on November 2nd, and spoke on the following subjects: "Metabolic Bone Disease Associated with Renal Impairment"; "Heart Disease and Thyroid Function". He was also one of the guest speakers at a meeting of the Nashville Postgraduate Medical Assembly on October 4th, where he spoke on "The Psychological Effects of Eating Habits."

Dr. Alfred Chanutin, professor of biochemistry, participated in the program at the meeting of the American College of Physicians, held at Duke University on October 10th and 11th; he also participated in the program of the Conference on Cancer Diagnostic Tests, in Chicago, Illinois on October 14th.

Dr. D. R. H. Gourley, research assistant in pharmacology, gave a lecture entitled "Inhibition of the Radioactive Phosphate Uptake in Erythrocytes" at the meeting of the American Physiological Society, in Columbus, Ohio, on September 15, 1950.

Dr. Russell L. Haden,

Crozet, has been appointed medical director of the Red Cross National Blood Program, and will work with Dr. Ross T. McIntire, chairman of the blood bank's committee on medical policies and procedures. Dr. Haden is a native of Virginia and recently returned to this State from Ohio where he was head of the Department of Medicine at the Cleveland Clinic.

Rural Health Conference to be Held in Memphis.

The sixth annual National Conference on Rural Health will be held in Memphis, February 23-24.

XUM

It will be sponsored by the Committee on Rural Health of the American Medical Association in cooperation with national farm organizations.

More than 700 farm and health leaders—including representatives of health and farm groups, farm newspapers, agricultural extension organizations, rural health committees, schools, public health officials and others—are expected to attend. Sessions will be held in the Peabody Hotel.

The theme will be "Why Wait—Let's Do It Ourselves," according to Dr. F. S. Crockett of Lafayette, Ind., chairman of the committee, who will outline the national rural health program.

Communication for the Paralyzed.

A "Hand Talking Chart" has been devised by Dr. Hamilton Cameron of New York who, for two and a half years, was unable to express himself orally. His chart contains twenty-hand-signs by means of which an aphasic can make his wants known. Dr. Cameron feels his chart should be so useful that he offers to send one or more without charge to our readers upon request to him at 601 West 110th Street, New York 25, N.Y.

Dr. William H. Kaufman,

Roanoke, announces the removal of his office to the Carlton Terrace Building at 920 South Jefferson Street, that city. He will continue in the practice of his specialty, dermatology.

"Dr. Christian" Honored.

For some years the Medical Society of the District of Columbia has been awarding honors annually to two outstanding doctors but this year was the first time an additional award was given to a fictitious doctor. At the annual dinner of the Society in October, the certificate for meritorious service to medicine was presented to Jean Hersholt on behalf of his "Dr. Christian" who has been presenting the best qualities of the physician and impressing the public with the close relationship between the patient and the family doctor.

The Potomac Society of Anesthesiologists,

Composed of anesthesiologists of Virginia, West Virginia, Maryland and District of Columbia, met in Washington, November the 27th. The meeting was held jointly with the Section on Anesthesiology of the District, with Dr. William E. Bageant, presiding. The program included the presentation of cases and a panel discussion by the Anesthesia Study Committee. The next meeting will be on January 22, 1951. Dr. Joel B. Hoberman of 4700 Twentieth Road, North, Arlington, is secretary and will be glad to furnish information about the meeting.

Read the Ads in the Monthly.

Important messages are presented in the advertisements in our journal each month. New products are announced from time to time and information is presented regarding the use of products featured. Other types of ads emphasize services rendered and commodities offered that may be used in your practice, your office, and your home. We aim to include only ethical advertisements.

Tell advertisers that you saw their ad in the MONTHLY. It pleases them and helps us.

Information Wanted in Regard to "Dr. King".

The Minnesota State Board of Medical Examiners has been investigating the case of "Dr. Tracy A. King", a Canadian by birth, who claims he entered the United States at Noyes, Minnesota, August 15, 1949. He has had no medical education but has been carrying around a doctor's medical bag containing numerous surgical instruments, a stethoscope, and various medicinal preparations. Any information in regard to "Dr. King" should be sent at once to the Minnesota Board at 230 Lowry Medical Arts Building, St. Paul.

Dr. Thomas F. Wheeldon,

Richmond, was on November the 3rd made an honorary member of Rotary International, in recognition of his work among crippled children.

A Practical Course

For resuscitation of patients who die in the operating room will be offered this winter by Dr. Claude S. Beck, under the sponsorship of the Cleveland Heart Association. The course, available to surgeons and anesthetists, will extend over a three-day period and will be offered once each month from November through March.

For further details, write to Virginia Heart Association, 509-A South Jefferson Street, Roanoke, Virginia.

Medical Staff Conferences

Are held at Memorial Hospital, Winchester, monthly from October through May, with the exception of December. In October, Dr. Harrison F. Flip-

XUM

pin of Philadelphia talked on "Clinical Notes on Modern Chemotherapy", and in November, Dr. Frank H. Lahey of Boston, delivered the Annual Hunter H. McGuire Lecture on "Surgical Management of Lesions of the Esophagus, Stomach and Duodenum".

The lectures booked for 1951 are:

January 17—"Symposium on Liver Disease", by Dr. John C. Hortenstine, Dr. Carrington Harrison, Dr. George H. Murphy, and Dr. William H. Shafer, all of Winchester.

February 21 — "Medical Anesthesiology" — Dr. Edward B. Tuohy, Professor of Anesthesiology, Georgetown University Medical Center, Washington, D. C.

March 21—"The Relationship of Gallbladder Disease to the Subjective and Objective Manifestations of the Anginal Syndrome"—Dr. J. Edwin Wood, Professor of Medicine, The University of Virginia, Charlottesville.

April 18—"The Annual Frank N. Hack Lecture —Current Status of ACTH and Cortisone"—Dr. A. McGehee Harvey, Professor of Medicine, The Johns Hopkins University; and Physician-in-Chief, The Johns Hopkins Hospital, Baltimore, Maryland.

May 17—"Clinicopathological Conference"—The Staff of the Winchester Memorial Hospital.

World Medical Association.

Fourteen American business firms completely defrayed the expense of meals for scores of foreign physicians who attended the five-day assembly of the Association in New York, the middle of October, whose finances were limited by the dollar shortage of their respective countries. These were in the form of a series of luncheons and dinners throughout the convention period. Twenty other business organizations contributed typical products of their respective firms to the 120 gift boxes of the "American Welcome" luncheon, and United Florists' Trades, Inc., kept flowers in the hotel rooms of the guests.

Virginia Division, American Cancer Society.

Doctors among the officers of the division, named at the meeting in Williamsburg the latter part of October, include Dr. Guy W. Horsley, Richmond, as vice-president; Dr. Cooper, medical director; and the following among trustees-at-large: Dr. Guy R. Fisher, Staunton; Dr. William H. Parker, Charlottesville; Dr. John R. Mapp, Nassawadox; Dr. N. M. Canter, Harrisonburg; and Dr. H. S. Daniel, Louisa.

Piedmont Sanatorium,

Early in November, opened for inspection a new wing which has a 52-bed capacity on each floor and is part of the building program now nearing completion at that State institution.

State Hospital News.

Dr. Carlton G. Holland, Charlottesville, became clinical director of Western State Hospital at Staunton on November 1, succeeding Dr. Stuart C. Runkle who has been recalled to active duty with the Navy. Dr. Holland was formerly assistant professor in the department of neurology and psychiatry at the University of Virginia Medical School.

Dr. G. Earle Johnson has resigned as superintendent of DeJarnette State Sanatorium, effective January 1. to head the Hoye Sanitarium in Meridian, Miss., which he has purchased.

Dr. James W. Phillips,

Class of '47, Medical College of Virginia, announces his removal from Coeburn to Portsmouth, where he is located at 204 Rolen Drive.

Pan-Pacific Surgical Congress.

The Fifth Congress will be held in Honolulu *November 10-21, 1951.*

The object of the Pan-Pacific Surgical Association is to bring together surgeons from countries bordering on the Pacific Ocean so as to permit the exchange of surgical ideas and methods and to develop a spirit of good fellowship among the various races represented. Although it was planned that meetings would be held every three years, world events have permitted but four conferences since the organization was conceived—the first in 1929 and the last in 1948.

The Fifth Congress provides an opportunity for doctors to combine a delightful vacation in Hawaii with attendence at a scientific meeting, the program of which will be presented by topflight surgeons from the Pacific area countries, as planned by the program committee. Doctors are urged to bring their families with them and are promised luxurious accommodations.

Dr. F. J. Pinkerton, of Honolulu, President of the association, has been officially appointed as travel agent for those coming to the meeting. To be assured

of preferred accomodations, travel and hotel reservations should be made through Dr. Pinkerton.

Further information may be obtained by writing the Pan-Pacific Surgical Association office, Suite 7, Young Building, Honolulu, T. H.

Wanted Physician

For better than $1,000 per month net income coal colliery practice near Norton, Virginia. Opening available due to draft. Must have Virginia license, car, be totally sober, dependable and able to handle home deliveries, and no addiction.

Three bed room steam heated bungalow with nice appointments available, in the coal colliery.

Interview necessary and any age man doctor who is capable and healthy is acceptable. Write or call. Prompt investigation requested. Dr. W. B. Barton, Stonega, Virginia. (*Adv.*)

Wanted Contract Practice.

Physician desires contract practice in either industrial section or coal mining area with guaranteed salary and opportunity for developing private practice. Give particulars in first letter. Address "Contract Practice". care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

Office Available.

Doctor's or dentist's office available in Richmond immediately. Corner Harrison and Franklin Streets. Call 5-4397. (*Adv.*)

Convalescent Home.

"Durell Haven", Arrington, Nelson County, Virginia, open for a limited number of convalescent or elderly people. All modern conveniences. Write Laura B. Horsley, R. N., Arrington, Va. (*Adv.*)

OBITUARIES

Dr. Stuart N. Michaux,

Widely known Richmond physician, died November 11, following an attack suffered the previous day while at his summer home on the Rappahannock. He was vice-president of the board of directors of Stuart Circle Hospital, Richmond, and since 1945 was emeritus professor of gynecology at the Medical College of Virginia. Dr. Michaux was seventy-two years of age and a graduate in medicine from the former University College of Medicine, Richmond, in 1903. He was connected with the faculty of the Medical College of Virginia from 1913 to 1945 and was a member of various medical organizations including the South Atlantic Association of Obstetricians and Gynecologists of which he was a charter member. He was also a member of various civic and social organizations. He is survived by his second wife.

Dr. Thomas Flatford Gill,

Well known physician of Richmond, died November the 2nd, at the age of seventy. He was born in Stafford County, this State, and graduated in medicine from the former University College of Medicine, Richmond, in 1908. He practiced for twelve years in Fauquier County before locating in Richmond in 1920. He was a member of the Richmond Academy of Medicine, Medical Society of Virginia and of the American Medical Association. He is survived by his wife and two sons, Drs. James T. and Fleming W. Gill of this city.

Dr. Delbert Lee LeKites,

For twenty-three years a resident of Chincoteague, was killed on the night of November the 2nd in an automobile accident when returning from a viait to a daughter in Atlantic City. He was seventy years of age and a graduate of the University of Louisville in 1909. On the 3rd, he was to have been the guest of honor at a Veterans of Foreign Wars banquet where he was to have received the organization's annual civic award for outstanding service to the community. He is survived by his wife and four children.

Dr. Emil Parks Amiss,

Retired physician of Martinsville, died November 3 in a convalescent home in Harrisonburg. He was seventy-eight years of age and a graduate of the former University College of Medicine, Richmond, in 1898. Dr. Amiss practiced in Page and Shenandoah Counties before locating in Martinsville. His wife survives him.

Dr. Percy Emerson Brown.

The magazine *Time*, in its October 23 issue, takes notice of the death of Dr. Brown, one of the prominent radiologists of the country. He set up the X-ray Department at Boston Children's Hospital in 1903 when the X-ray was only seven years old, and through his work in World War I and his civilian practice submitted to fifty or more operations as a result of burns on his hands and an eye.

XUM